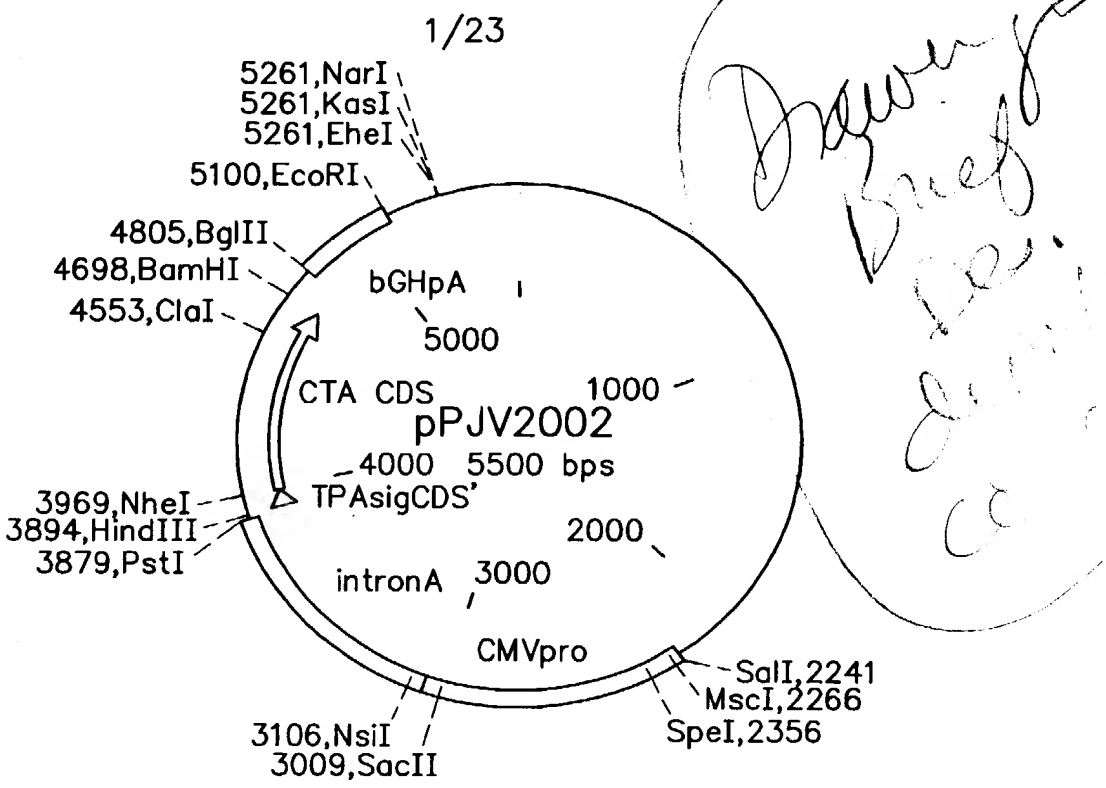


Molecule: pPJV2002, 5500 bps DNA Circular
File Name: pPJV2002.cm5,

Description: Ligation of CTA PCR frag Nhe Bam cut into 7054 Nhe Bam Vector

Notes:

Molecule Features:

Type	Start	End	Name	Description
REGION	2242	3060	CMVpro	
REGION	3061	3884	intronA	
GENE	3906	3969	TPAsigCDS'	
GENE	3975	4697	CTA CDS	
REGION	4805	5101	bGHpA	

Enzymes (15 sites)

SalI	2241,	MscI	2266,	SpeI	2356,	SacII	3009
NsiI	3106,	PstI	3879,	HindIII	3894,	NheI	3969
ClaI	4553,	BamHI	4698,	BglII	4805,	EcoRI	5100

FIG. 1-1

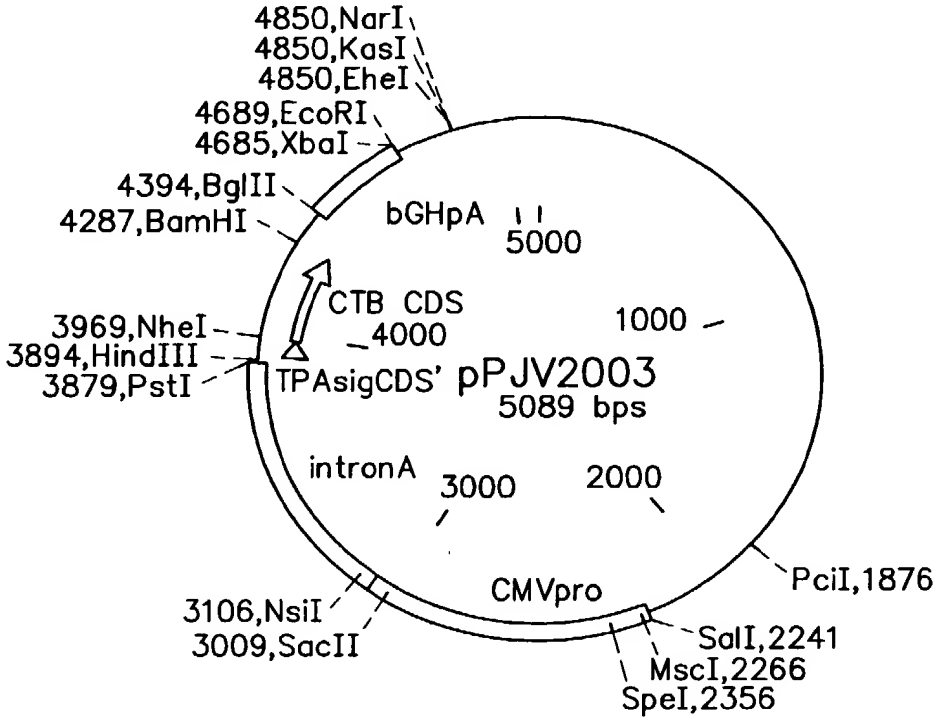
Molecule: pPJV2002, 5500 bps DNA Circular
Description: Ligation of CTA PCR frag Nhe Bam cut into 7054 Nhe Bam Vector
File Name: pPJV2002.cm5,
Printed: 1-5500 bps (Full), format Single Strand

```
   1  GACGAAAGGG CCTCGTGATA CGCCTATTTT TATAGGTTAA TGTCATGATA ATAATGGTTT
  61  CTTAGACGTC AGGTGGCACT TTTCGGGGAA ATGTGCGCGG AACCCCTATT TGTTTATTTT
 121  TCTAAATACA TTCAAATATG TATCCGCTCA TGAGACAATA ACCCTGATAA ATGCTTCAAT
 181  AATATTGAAA AAGGAAGAGT ATGAGTATTC AACATTTCCG TGTCGCCCTT ATTCCCTTTT
 241  TTGCGGCATT TTGCCTTCCT GTTTTTGCTC ACCCAGAAAC GCTGGTGAAA GTAAAAGATG
 301  CTGAAGATCA GTTGGGTGCA CGAGTGGGTT ACATCGAACT GGATCTCAAC AGCGGTAAGA
 361  TCCTTGAGAG TTTTCGCCCC GAAGAACGTT TTCCAATGAT GAGCACTTTT AAAGTTCTGC
 421  TATGTGGCGC GGTATTATCC CGTATTGACG CCGGGCAAGA GCAACTCGGT CGCCGCATAC
 481  ACTATTCTCA GAATGACTTG GTTGAGTACT CACCAGTCAC AGAAAAGCAT CTTACGGATG
 541  GCATGACAGT AAGAGAATTA TGCAGTGCTG CCATAACCAT GAGTGATAAC ACTGCGGCCA
 601  ACTTACTTCT GACAACGATC GGAGGACCGA AGGAGCTAAC CGCTTTTTTG CACAACATGG
 661  GGGATCATGT AACTCGCCTT GATCGTTGGG AACCGGAGCT GAATGAAGCC ATACCAAACG
 721  ACGAGCGTGA CACCACGATG CCTGTAGCAA TGGCAACAAC GTTGCGCAAA CTATTAACTG
 781  GCGAACTACT TACTCTAGCT TCCCGGCAAC AATTAATAGA CTGGATGGAG GCGGATAAAG
 841  TTGCAGGACC ACTTCTGCGC TCGGCCCTTC CGGCTGGCTG GTTTATTGCT GATAAATCTG
 901  GAGCCGGTGA GCGTGGGTCT CGCGGTATCA TTGCAGCACT GGGGCCAGAT GGTAAGCCCT
 961  CCCGTATCGT AGTTATCTAC ACGACGGGGA GTCAGGCAAC TATGGATGAA CGAAATAGAC
1021  AGATCGCTGA GATAGGTGCC TCACTGATTA AGCATTGGTA ACTGTCAGAC CAAGTTTACT
1081  CATATATACT TTAGATTGAT TTAAAACTTC ATTTTTAATT TAAAAGGATC TAGGTGAAGA
1141  TCCTTTTTGA TAATCTCATG ACCAAAATCC CTTAACGTGA GTTTTCGTTC CACTGAGCGT
1201  CAGACCCCGT AGAAAAGATC AAAGGATCTT CTTGAGATCC TTTTTTTCTG CGCGTAATCT
1261  GCTGCTTGCA AACAAAAAAA CCACCGCTAC CAGCGGTGGT TTGTTTGCCG GATCAAGAGC
1321  TACCAACTCT TTTTCCGAAG GTAACTGGCT TCAGCAGAGC GCAGATACCA AATACTGTCC
1381  TTCTAGTGTA GCCGTAGTTA GGCCACCACT TCAAGAACTC TGTAGCACCG CCTACATACC
1441  TCGCTCTGCT AATCCTGTTA CCAGTGGCTG CTGCCAGTGG CGATAAGTCG TGTCTTACCG
1501  GGTTGGACTC AAGACGATAG TTACCGGATA AGGCGCAGCG GTCGGGCTGA ACGGGGGGTT
1561  CGTGCACACA GCCCAGCTTG GAGCGAACGA CCTACACCGA ACTGAGATAC CTACAGCGTG
1621  AGCATTGAGA AAGCGCCACG CTTCCCGAAG GGAGAAAGGC GGACAGGTAT CCGGTAAGCG
1681  GCAGGGTCGG AACAGGAGAG CGCACGAGGG AGCTTCCAGG GGGAAACGCC TGGTATCTTT
1741  ATAGTCCTGT CGGGTTTCGC CACCTCTGAC TTGAGCGTCG ATTTTTGTGA TGCTCGTCAG
1801  GGGGGCGGAG CCTATGGAAA AACGCCAGCA ACGCGGCCTT TTTACGGTTC CTGGCCTTTT
1861  GCTGGCCTTT TGCTCACATG TTCTTTCCTG CGTTATCCCC TGATTCTGTG GATAACCGTA
1921  TTACCGCCTT TGAGTGAGCT GATACCGCTC GCCGCAGCCG AACGACCGAG CGCAGCGAGT
1981  CAGTGAGCGA GGAAGCGGAA GAGCGCCCAA TACGCAAACC GCCTCTCCCC GCGCGTTGGC
2041  CGATTCATTA ATGCAGCTGG CACGACAGGT TTCCCGACTG GAAAGCGGGC AGTGAGCGCA
2101  ACGCAATTAA TGTGAGTTAG CTCACTCATT AGGCACCCCA GGCTTTACAC TTTATGCTTC
2161  CGGCTCGTAT GTTGTGTGGA ATTGTGAGCG GATAACAATT TCACACAGGA AACAGCTATG
2221  ACCATGATTA CGCCAAGCTA GTCGACATAA ATCAATATTG GCTATTGGCC ATTGCATACG
2281  TTGTATCTAT ATCATAATAT GTACATTTAT ATTGGCTCAT GTCCAATATG ACCGCCATGT
2341  TGACATTGAT TATTGACTAG TTATTAATAG TAATCAATTA CGGGGTCATT AGTTCATAGC
2401  CCATATATGG AGTTCCGCGT TACATAACTT ACGGTAAATG GCCCGCCTCG TGACCGCCCA
2461  ACGACCCCCG CCCATTGACG TCAATAATGA CGTATGTTCC CATAGTAACG CCAATAGGGA
2521  CTTTCCATTG ACGTCAATGG GTGGAGTATT TACGGTAAAC TGCCCACTTG GCAGTACATC
2581  AAGTGTATCA TATGCCAAGT CCGGCCCCCT ATTGACGTCA ATGACGGTAA ATGGCCCGCC
2641  TGGCATTATG CCCAGTACAT GACCTTACGG GACTTTCCTA CTTGGCAGTA CATCTACGTA
2701  TTAGTCATCG CTATTACCAT GGTGATGCGG TTTTGGCAGT ACACCAATGG GCGTGGATAG
2761  CGGTTTGACT CACGGGGATT TCCAAGTCTC CACCCCATTG ACGTCAATGG GAGTTTGTTT
2821  TGGCACCAAA ATCAACGGGA CTTTCCAAAA TGTCGTAATA ACCCCGCCCC GTTGACGCAA
2881  ATGGGCGGTA GGCGTGTACG GTGGGAGGTC TATATAAGCA GAGCTCGTTT AGTGAACCGT
```

FIG. 1-2

```
2941  CAGATCGCCT GGAGACGCCA TCCACGCTGT TTTGACCTCC ATAGAAGACA CCGGGACCGA
3001  TCCAGCCTCC GCGGCCGGGA ACGGTGCATT GGAACGCGGA TTCCCCGTGC CAAGAGTGAC
3061  GTAAGTACCG CCTATAGACT CTATAGGCAC ACCCCTTTGG CTCTTATGCA TGCTATACTG
3121  TTTTTGGCTT GGGGCCTATA CACCCCCGCT CCTTATGCTA TAGGTGATGG TATAGCTTAG
3181  CCTATAGGTG TGGGTTATTG ACCATTATTG ACCACTCCCC TATTGGTGAC GATACTTTCC
3241  ATTACTAATC CATAACATGG CTCTTTGCCA CAACTATCTC TATTGGCTAT ATGCCAATAC
3301  TCTGTCCTTC AGAGACTGAC ACGGACTCTG TATTTTTACA GGATGGGGTC CCATTTATTA
3361  TTTACAAATT CACATATACA ACAACGCCGT CCCCCGTGCC CGCAGTTTTT ATTAAACATA
3421  GCGTGGGATC TCCACGCGAA TCTCGGGTAC GTGTTCCGGA CATGGGCTCT TCTCCGGTAG
3481  CGGCGGAGCT TCCACATCCG AGCCCTGGTC CCATGCCTCC AGCGGCTCAT GGTCGCTCGG
3541  CAGCTCCTTG CTCCTAACAG TGGAGGCCAG ACTTAGGCAC AGCACAATGC CCACCACCAC
3601  CAGTGTGCCG CACAAGGCCG TGGCGGTAGG GTATGTGTCT GAAAATGAGC TCGGAGATTG
3661  GGCTCGCACC GTGACGCAGA TGGAAGACTT AAGGCAGCGG CAGAACAAGA TGCAGGCAGC
3721  TGAGTTGTTG TATTCTGATA AGAGTCAGAG GTAACTCCCG TTGCGGTGCT GTTAACGGTG
3781  GAGGGCAGTG TAGTCTGAGC AGTACTCGTT GCTGCCGCGC GCGCCACCAG ACATAATAGC
3841  TGACAGACTA ACAGACTGTT CCTTTCCATG GGTCTTTTCT GCAGTCACCG TCCAAGCTTG
3901  CAATCATGGA TGCAATGAAG AGAGGGCTCT GCTGTGTGCT GCTGCTGTGT GGAGCAGTCT
3961  TCGTTTCGGC TAGCAATGAT GATAAGTTAT ATCGGGCAGA TTCTAGACCT CCTGATGAAA
4021  TAAAGCAGTC AGGTGGTCTT ATGCCAAGAG GACAGAGTGA GTACTTTGAC CGAGGTACTC
4081  AAATGAATAT CAACCTTTAT GATCATGCAA GAGGAACTCA GACGGGATTT GTTAGGCACG
4141  ATGATGGATA TGTTTCCACC TCAATTAGTT TGAGAAGTGC CCACTTAGTG GGTCAAACTA
4201  TATTGTCTGG TCATTCTACT TATTATATAT ATGTTATAGC CACTGCACCC AACATGTTTA
4261  ACGTTAATGA TGTATTAGGG GCATACAGTC CTCATCCAGA TGAACAAGAA GTTTCTGCTT
4321  TAGGTGGGAT TCCATACTCC CAAATATATG GATGGTATCG AGTTCATTTT GGGGTGCTTG
4381  ATGAACAATT ACATCGTAAT AGGGGCTACA GAGATAGATA TTACAGTAAC TTAGATATTG
4441  CTCCAGCAGC AGATGGTTAT GGATTGGCAG GTTTCCCTCC GGAGCATAGA GCTTGGAGGG
4501  AAGAGCCGTG GATTCATCAT GCACCGCCGG GTTGTGGGAA TGCTCCAAGA TCATCGATGA
4561  GTAATACTTG CGATGAAAAA ACCCAAAGTC TAGGTGTAAA ATTCCTTGAC GAATACCAAT
4621  CTAAAGTTAA AAGACAAATA TTTTCAGGCT ATCAATCTGA TATTGATACA CATAATAGAA
4681  TTAAGGATGA ATTATGAGGA TCCTCGCAAT CCCTAGGAGC ATTAGGCAAG GGCTTGAGCT
4741  CACGCTCTTG TGAGGGACAG AAATACAATC AGGGGCAGTA TATGAATACT CCATGGAGAA
4801  ACCCAGATCT ACGTATGATC AGCCTCGACT GTGCCTTCTA GTTGCCAGCC ATCTGTTGTT
4861  TGCCCCTCCC CCGTGCCTTC CTTGACCCTG GAAGGTGCCA CTCCCACTGT CCTTTCCTAA
4921  TAAAATGAGG AAATTGCATC GCATTGTCTG AGTAGGTGTC ATTCTATTCT GGGGGGTGGG
4981  GTGGGGCAGG ACAGCAAGGG GGAGGATTGG GAAGACAATA GCAGGCATGC TGGGGATGCG
5041  GTGGGCTCTA TGGCTTCTGA GGCGGAAAGA ACCAGCTGGG GCTCGACAGC TCGACTCTAG
5101  AATTCACTGG CCGTCGTTTT ACAACGTCGT GACTGGGAAA ACCCTGGCGT TACCCAACTT
5161  AATCGCCTTG CAGCACATCC CCCTTTCGCC AGCTGGCGTA ATAGCGAAGA GGCCCGCACC
5221  GATCGCCCTT CCCAACAGTT GCGCAGCCTG AATGGCGAAT GGCGCCTGAT GCGGTATTTT
5281  CTCCTTACGC ATCTGTGCGG TATTTCACAC CGCATATGGT GCACTCTCAG TACAATCTGC
5341  TCTGATGCCG CATAGTTAAG CCAGCCCCGA CACCCGCCAA CACCCGCTGA CGCGCCCTGA
5401  CGGGCTTGTC TGCTCCCGGC ATCCGCTTAC AGACAAGCTG TGACCGTCTC CGGGAGCTGC
5461  ATGTGTCAGA GGTTTTCACC GTCATCACCG AAACGCGCGA
```

FIG. 1-3



Molecule: pPJV2003, 5089 bps DNA Circular
File Name: pPJV2003.cm5,

Description: Ligation of CTB nhe bam cut frag into 7054 Nhe Bam Vector

Notes:

Molecule Features:

Type	Start	End	Name	Description
REGION	2242	3060	CMVpro	
REGION	3061	3884	intronA	
GENE	3906	3969	TPAsigCDS'	
GENE	3975	4286	CTB CDS	
REGION	4394	4690	bGHpA	

Enzymes (16 sites)

PciI	1876,	SalI	2241,	MscI	2266,	SpeI	2356
SacII	3009,	NsiI	3106,	PstI	3879,	HindIII	3894
NheI	3969,	BamHI	4287,	BglII	4394,	XbaI	4685

FIG. 2-1

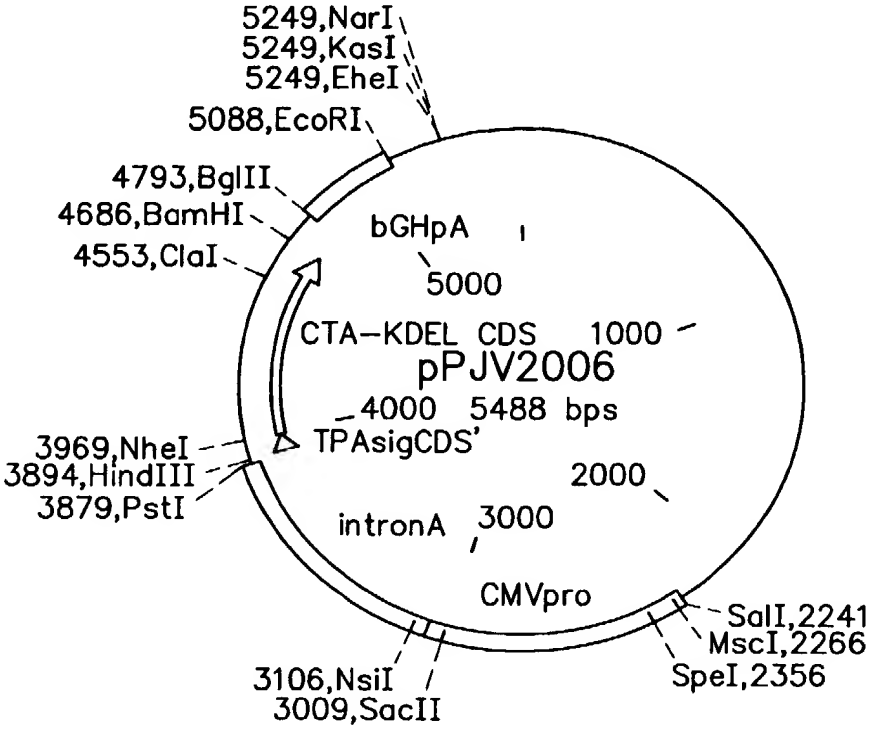
Molecule: pPJV2003, 5089 bps DNA Circular
Description: Ligation of CTB nhe bam cut frag into 7054 Nhe Bam Vector
File Name: pPJV2003.cm5,
Printed: 1-5089 bps (Full), format Single Strand

```
   1  GACGAAAGGG CCTCGTGATA CGCCTATTTT TATAGGTTAA TGTCATGATA ATAATGGTTT
  61  CTTAGACGTC AGGTGGCACT TTTCGGGGAA ATGTGCGCGG AACCCCTATT TGTTTATTTT
 121  TCTAAATACA TTCAAATATG TATCCGCTCA TGAGACAATA ACCCTGATAA ATGCTTCAAT
 181  AATATTGAAA AAGGAAGAGT ATGAGTATTC AACATTTCCG TGTCGCCCTT ATTCCCTTTT
 241  TTGCGGCATT TTGCCTTCCT GTTTTTGCTC ACCCAGAAAC GCTGGTGAAA GTAAAAGATG
 301  CTGAAGATCA GTTGGGTGCA CGAGTGGGTT ACATCGAACT GGATCTCAAC AGCGGTAAGA
 361  TCCTTGAGAG TTTTCGCCCC GAAGAACGTT TTCCAATGAT GAGCACTTTT AAAGTTCTGC
 421  TATGTGGCGC GGTATTATCC CGTATTGACG CCGGGCAAGA GCAACTCGGT CGCCGCATAC
 481  ACTATTCTCA GAATGACTTG GTTGAGTACT CACCAGTCAC AGAAAAGCAT CTTACGGATG
 541  GCATGACAGT AAGAGAATTA TGCAGTGCTG CCATAACCAT GAGTGATAAC ACTGCGGCCA
 601  ACTTACTTCT GACAACGATC GGAGGACCGA AGGAGCTAAC CGCTTTTTTG CACAACATGG
 661  GGGATCATGT AACTCGCCTT GATCGTTGGG AACCGGAGCT GAATGAAGCC ATACCAAACG
 721  ACGAGCGTGA CACCACGATG CCTGTAGCAA TGGCAACAAC GTTGCGCAAA CTATTAACTG
 781  GCGAACTACT TACTCTAGCT TCCCGGCAAC AATTAATAGA CTGGATGGAG GCGGATAAAG
 841  TTGCAGGACC ACTTCTGCGC TCGGCCCTTC CGGCTGGCTG GTTTATTGCT GATAAATCTG
 901  GAGCCGGTGA GCGTGGGTCT CGCGGTATCA TTGCAGCACT GGGGCCAGAT GGTAAGCCCT
 961  CCCGTATCGT AGTTATCTAC ACGACGGGGA GTCAGGCAAC TATGGATGAA CGAAATAGAC
1021  AGATCGCTGA GATAGGTGCC TCACTGATTA AGCATTGGTA ACTGTCAGAC CAAGTTTACT
1081  CATATATACT TTAGATTGAT TTAAAACTTC ATTTTTAATT TAAAAGGATC TAGGTGAAGA
1141  TCCTTTTTGA TAATCTCATG ACCAAAATCC CTTAACGTGA GTTTTCGTTC CACTGAGCGT
1201  CAGACCCCGT AGAAAAGATC AAAGGATCTT CTTGAGATCC TTTTTTTCTG CGCGTAATCT
1261  GCTGCTTGCA AACAAAAAAA CCACCGCTAC CAGCGGTGGT TTGTTTGCCG GATCAAGAGC
1321  TACCAACTCT TTTTCCGAAG GTAACTGGCT TCAGCAGAGC GCAGATACCA AATACTGTCC
1381  TTCTAGTGTA GCCGTAGTTA GGCCACCACT TCAAGAACTC TGTAGCACCG CCTACATACC
1441  TCGCTCTGCT AATCCTGTTA CCAGTGGCTG CTGCCAGTGG CGATAAGTCG TGTCTTACCG
1501  GGTTGGACTC AAGACGATAG TTACCGGATA AGGCGCAGCG GTCGGGCTGA ACGGGGGGTT
1561  CGTGCACACA GCCCAGCTTG GAGCGAACGA CCTACACCGA ACTGAGATAC CTACAGCGTG
1621  AGCATTGAGA AAGCGCCACG CTTCCCGAAG GGAGAAAGGC GGACAGGTAT CCGGTAAGCG
1681  GCAGGGTCGG AACAGGAGAG CGCACGAGGG AGCTTCCAGG GGGAAACGCC TGGTATCTTT
1741  ATAGTCCTGT CGGGTTTCGC CACCTCTGAC TTGAGCGTCG ATTTTTGTGA TGCTCGTCAG
1801  GGGGGCGGAG CCTATGGAAA AACGCCAGCA ACGCGGCCTT TTTACGGTTC CTGGCCTTTT
1861  GCTGGCCTTT TGCTCACATG TTCTTTCCTG CGTTATCCCC TGATTCTGTG GATAACCGTA
1921  TTACCGCCTT TGAGTGAGCT GATACCGCTC GCCGCAGCCG AACGACCGAG CGCAGCGAGT
1981  CAGTGAGCGA GGAAGCGGAA GAGCGCCCAA TACGCAAACC GCCTCTCCCC GCGCGTTGGC
2041  CGATTCATTA ATGCAGCTGG CACGACAGGT TTCCCGACTG GAAAGCGGGC AGTGAGCGCA
2101  ACGCAATTAA TGTGAGTTAG CTCACTCATT AGGCACCCCA GGCTTTACAC TTTATGCTTC
2161  CGGCTCGTAT GTTGTGTGGA ATTGTGAGCG GATAACAATT TCACACAGGA AACAGCTATG
2221  ACCATGATTA CGCCAAGCTA GTCGACATAA ATCAATATTG GCTATTGGCC ATTGCATACG
2281  TTGTATCTAT ATCATAATAT GTACATTTAT ATTGGCTCAT GTCCAATATG ACCGCCATGT
2341  TGACATTGAT TATTGACTAG TTATTAATAG TAATCAATTA CGGGGTCATT AGTTCATAGC
2401  CCATATATGG AGTTCCGCGT TACATAACTT ACGGTAAATG GCCCGCCTGG TGACCGCCCA
2461  ACGACCCCCG CCCATTGACG TCAATAATGA CGTATGTTCC CATAGTAACG CCAATAGGGA
2521  CTTTCCATTG ACGTCAATGG GTGGAGTATT TACGGTAAAC TGCCCACTTG GCAGTACATC
```

FIG. 2-2

```
2581  AAGTGTATCA TATGCCAAGT CCGGCCCCCT ATTGACGTCA ATGACGGTAA ATGGCCCGCC
2641  TGGCATTATG CCCAGTACAT GACCTTACGG GACTTTCCTA CTTGGCAGTA CATCTACGTA
2701  TTAGTCATCG CTATTACCAT GGTGATGCGG TTTTGGCAGT ACACCAATGG GCGTGGATAG
2761  CGGTTTGACT CACGGGGATT TCCAAGTCTC CACCCCATTG ACGTCAATGG GAGTTTGTTT
2821  TGGCACCAAA ATCAACGGGA CTTTCCAAAA TGTCGTAATA ACCCCGCCCC GTTGACGCAA
2881  ATGGGCGGTA GGCGTGTACG GTGGGAGGTC TATATAAGCA GAGCTCGTTT AGTGAACCGT
2941  CAGATCGCCT GGAGACGCCA TCCACGCTGT TTTGACCTCC ATAGAAGACA CCGGGACCGA
3001  TCCAGCCTCC GCGGCCGGGA ACGGTGCATT GGAACGCGGA TTCCCCGTGC CAAGAGTGAC
3061  GTAAGTACCG CCTATAGACT CTATAGGCAC ACCCCTTTGG CTCTTATGCA TGCTATACTG
3121  TTTTTGGCTT GGGGCCTATA CACCCCCGCT CCTTATGCTA TAGGTGATGG TATAGCTTAG
3181  CCTATAGGTG TGGGTTATTG ACCATTATTG ACCACTCCCC TATTGGTGAC GATACTTTCC
3241  ATTACTAATC CATAACATGG CTCTTTGCCA CAACTATCTC TATTGGCTAT ATGCCAATAC
3301  TCTGTCCTTC AGAGACTGAC ACGGACTCTG TATTTTTACA GGATGGGGTC CCATTTATTA
3361  TTTACAAATT CACATATACA ACAACGCCGT CCCCCGTGCC CGCAGTTTTT ATTAAACATA
3421  GCGTGGGATC TCCACGCGAA TCTCGGGTAC GTGTTCCGGA CATGGGCTCT TCTCCGGTAG
3481  CGGCGGAGCT TCCACATCCG AGCCCTGGTC CCATGCCTCC AGCGGCTCAT GGTCGCTCGG
3541  CAGCTCCTTG CTCCTAACAG TGGAGGCCAG ACTTAGGCAC AGCACAATGC CCACCACCAC
3601  CAGTGTGCCG CACAAGGCCG TGGCGGTAGG GTATGTGTCT GAAAATGAGC TCGGAGATTG
3661  GGCTCGCACC GTGACGCAGA TGGAAGACTT AAGGCAGCGG CAGAAGAAGA TGCAGGCAGC
3721  TGAGTTGTTG TATTCTGATA AGAGTCAGAG GTAACTCCCG TTGCGGTGCT GTTAACGGTG
3781  GAGGGCAGTG TAGTCTGAGC AGTACTCGTT GCTGCCGCGC GCGCCACCAG ACATAATAGC
3841  TGACAGACTA ACAGACTGTT CCTTTCCATG GGTCTTTTCT GCAGTCACCG TCCAAGCTTG
3901  CAATCATGGA TGCAATGAAG AGAGGGCTCT GCTGTGTGCT GCTGCTGTGT GGAGCAGTCT
3961  TCGTTTCGGC TAGCACACCT CAAAATATTA CTGATTTGTG TGCAGAATAC CACAACACAC
4021  AAATATATAC GCTAAATGAT AAGATATTTT CGTATACAGA ATCTCTAGCT GGAAAAAGAG
4081  AGATGGCTAT CATTACTTTT AAGAATGGTG CAATTTTTCA AGTAGAAGTA CCAGGTAGTC
4141  AACATATAGA TTCACAAAAA AAAGCGATTG AAAGGATGAA GGATACCCTG AGGATTGCAT
4201  ATCTTACTGA AGCTAAAGTC GAAAAGTTAT GTGTATGGAA TAATAAAACG CCTCATGCGA
4261  TTGCCGCAAT TAGTATGGCA AATTAAGGAT CCTCGCAATC CCTAGGAGGA TTAGGCAAGG
4321  GCTTGAGCTC ACGCTCTTGT GAGGGACAGA AATACAATCA GGGGCAGTAT ATGAATACTC
4381  CATGGAGAAA CCCAGATCTA CGTATGATCA GCCTCGACTG TGCCTTCTAG TTGCCAGCCA
4441  TCTGTTGTTT GCCCCTCCCC CGTGCCTTCC TTGACCCTGG AAGGTGCCAC TCCCACTGTC
4501  CTTTCCTAAT AAAATGAGGA AATTGCATCG CATTGTCTGA GTAGGTGTCA TTCTATTCTG
4561  GGGGGTGGGG TGGGGCAGGA CAGCAAGGGC GAGGATTGGG AAGACAATAG CAGGCATGCT
4621  GGGGATGCGG TGGGCTCTAT GGCTTCTGAG GCGGAAAGAA CCAGCTGGGG CTCGACAGCT
4681  CGACTCTAGA ATTCACTGGC CGTCGTTTTA CAACGTCGTG ACTGGGAAAA CCCTGGCGTT
4741  ACCCAACTTA ATCGCCTTGC AGCACATCCC CCTTTCGCCA GCTGGCGTAA TAGCGAAGAG
4801  GCCCGCACCG ATCGCCCTTC CCAACAGTTG CGCAGCCTGA ATGGCGAATG GCGCCTGATG
4861  CGGTATTTTC TCCTTACGCA TCTGTGCGGT ATTTCACACC GCATATGGTG CACTCTCAGT
4921  ACAATCTGCT CTGATGCCGC ATAGTTAAGC CAGCCCCGAC ACCCGCCAAC ACCCGCTGAC
4981  GCGCCCTGAC GGGCTTGTCT GCTCCCGGCA TCCGCTTACA GACAAGCTGT GACCGTCTCC
5041  GGGAGCTGCA TGTGTCAGAG GTTTTCACCG TCATCACCGA AACGCGCGA
```

FIG. 2-3



Molecule: pPJV2006, 5488 bps DNA Circular
File Name: pPJV2006.cm5,

Description: Ligation of CTA–KDEL Frag cut w/ Nhe Bam into 7054 Nhe Bam Vector
Notes:

Molecule Features:

Type	Start	End	Name	Description
REGION	2242	3060	CMVpro	
REGION	3061	3884	intronA	
GENE	3906	3969	TPAsigCDS'	
GENE	3975	4685	CTA–KDEL CDS	
REGION	4793	5089	bGHpA	

Enzymes (15 sites)

SalI	2241,	MscI	2266,	SpeI	2356,	SacII	3009
NsiI	3106,	PstI	3879,	HindIII	3894,	NheI	3969
ClaI	4553,	BamHI	4686,	BglII	4793,	EcoRI	5088

FIG. 3-1

Molecule: pPJV2006, 5488 bps DNA Circular
Description: Ligation of CTA-KDEL PCR Frag cut w/ Nhe Bam into 7054 Nhe Bam Vector
File Name: pPJV2006.cm5,
Printed: 1-5488 bps (Full), format Single Strand

```
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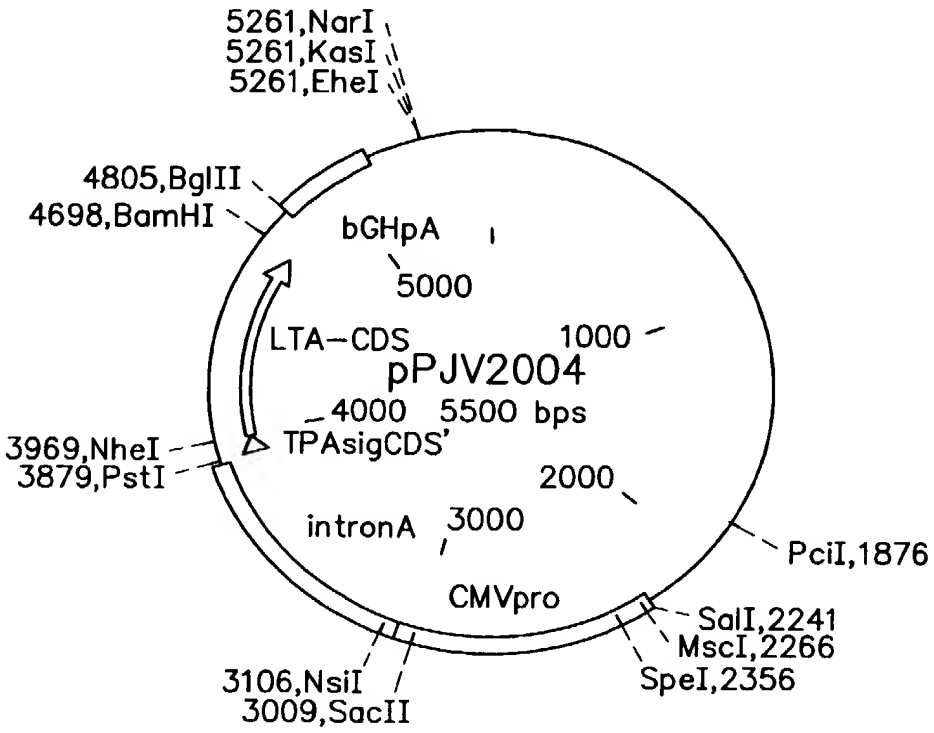
  61  CTTAGACGTC AGGTGGCACT TTTCGGGGAA ATGTGCGCGG AACCCCTATT TGTTTATTTT
 121  TCTAAATACA TTCAAATATG TATCCGCTCA TGAGACAATA ACCCTGATAA ATGCTTCAAT
 181  AATATTGAAA AAGGAAGAGT ATGAGTATTC AACATTTCCG TGTCGCCCTT ATTCCCTTTT
 241  TTGCGGCATT TTGCCTTCCT GTTTTTGCTC ACCCAGAAAC GCTGGTGAAA GTAAAAGATG
 301  CTGAAGATCA GTTGGGTGCA CGAGTGGGTT ACATCGAACT GGATCTCAAC AGCGGTAAGA
 361  TCCTTGAGAG TTTTCGCCCC GAAGAACGTT TTCCAATGAT GAGCACTTTT AAAGTTCTGC
 421  TATGTGGCGC GGTATTATCC CGTATTGACG CCGGGCAAGA GCAACTCGGT CGCCGCATAC
 481  ACTATTCTCA GAATGACTTG GTTGAGTACT CACCAGTCAC AGAAAAGCAT CTTACGGATG
 541  GCATGACAGT AAGAGAATTA TGCAGTGCTG CCATAACCAT GAGTGATAAC ACTGCGGCCA
 601  ACTTACTTCT GACAACGATC GGAGGACCGA AGGAGCTAAC CGCTTTTTTG CACAACATGG
 661  GGGATCATGT AACTCGCCTT GATCGTTGGG AACCGGAGCT GAATGAAGCC ATACCAAACG
 721  ACGAGCGTGA CACCACGATG CCTGTAGCAA TGGCAACAAC GTTGCGCAAA CTATTAACTG
 781  GCGAACTACT TACTCTAGCT TCCCGGCAAC AATTAATAGA CTGGATGGAG GCGGATAAAG
 841  TTGCAGGACC ACTTCTGCGC TCGGCCCTTC CGGCTGGCTG GTTTATTGCT GATAAATCTG
 901  GAGCCGGTGA GCGTGGGTCT CGCGGTATCA TTGCAGCACT GGGGCCAGAT GGTAAGCCCT
 961  CCCGTATCGT AGTTATCTAC ACGACGGGGA GTCAGGCAAC TATGGATGAA CGAAATAGAC
1021  AGATCGCTGA GATAGGTGCC TCACTGATTA AGCATTGGTA ACTGTCAGAC CAAGTTTACT
1081  CATATATACT TTAGATTGAT TTAAAACTTC ATTTTTAATT TAAAAGGATC TAGGTGAAGA
1141  TCCTTTTTGA TAATCTCATG ACCAAAATCC CTTAACGTGA GTTTTCGTTC CACTGAGCGT
1201  CAGACCCCGT AGAAAAGATC AAAGGATCTT CTTGAGATCC TTTTTTTCTG CGCGTAATCT
1261  GCTGCTTGCA AACAAAAAAA CCACCGCTAC CAGCGGTGGT TTGTTTGCCG GATCAAGAGC
1321  TACCAACTCT TTTTCCGAAG GTAACTGGCT TCAGCAGAGC GCAGATACCA AATACTGTCC
1381  TTCTAGTGTA GCCGTAGTTA GGCCACCACT TCAAGAACTC TGTAGCACCG CCTACATACC
1441  TCGCTCTGCT AATCCTGTTA CCAGTGGCTG CTGCCAGTGG CGATAAGTCG TGTCTTACCG
1501  GGTTGGACTC AAGACGATAG TTACCGGATA AGGCGCAGCG GTCGGGCTGA ACGGGGGGTT
1561  CGTGCACACA GCCCAGCTTG GAGCGAACGA CCTACACCGA ACTGAGATAC CTACAGCGTG
1621  AGCATTGAGA AAGCGCCACG CTTCCCGAAG GGAGAAAGGC GGACAGGTAT CCGGTAAGCG
1681  GCAGGGTCGG AACAGGAGAG CGCACGAGGG AGCTTCCAGG GGGAAACGCC TGGTATCTTT
1741  ATAGTCCTGT CGGGTTTCGC CACCTCTGAC TTGAGCGTCG ATTTTTGTGA TGCTCGTCAG
1801  GGGGGCGGAG CCTATGGAAA AACGCCAGCA ACGCGGCCTT TTTACGGTTC CTGGCCTTTT
1861  GCTGGCCTTT TGCTCACATG TTCTTTCCTG CGTTATCCCC TGATTCTGTG GATAACCGTA
1921  TTACCGCCTT TGAGTGAGCT GATACCGCTC GCCGCAGCCG AACGACCGAG CGCAGCGAGT
1981  CAGTGAGCGA GGAAGCGGAA GAGCGCCCAA TACGCAAACC GCCTCTCCCC GCGCGTTGGC
2041  CGATTCATTA ATGCAGCTGG CACGACAGGT TTCCCGACTG GAAAGCGGGC AGTGAGCGCA
2101  ACGCAATTAA TGTGAGTTAG CTCACTCATT AGGCACCCCA GGCTTTACAC TTTATGCTTC
2161  CGGCTCGTAT GTTGTGTGGA ATTGTGAGCG GATAACAATT TCACACAGGA AACAGCTATG
2221  ACCATGATTA CGCCAAGCTA GTCGACATAA ATCAATATTG GCTATTGGCC ATTGCATACG
2281  TTGTATCTAT ATCATAATAT GTACATTTAT ATTGGCTCAT GTCCAATATG ACCGCCATGT
2341  TGACATTGAT TATTGACTAG TTATTAATAG TAATCAATTA CGGGGTCATT AGTTCATAGC
2401  CCATATATGG AGTTCCGCGT TACATAACTT ACGGTAAATG GCCCGCCTGG TGACCGCCCA
2461  ACGACCCCCG CCCATTGACG TCAATAATGA CGTATGTTCC CATAGTAACG CCAATAGGGA
2521  CTTTCCATTG ACGTCAATGG GTGGAGTATT TACGGTAAAC TGCCCACTTG GCAGTACATC
2581  AAGTGTATCA TATGCCAAGT CCGGCCCCCT ATTGACGTCA ATGACGGTAA ATGGCCCGCC
2641  TGGCATTATG CCCAGTACAT GACCTTACGG GACTTTCCTA CTTGGCAGTA CATCTACGTA
```

FIG. 3-2

```
2701  TTAGTCATCG CTATTACCAT GGTGATGCGG TTTTGGCAGT ACACCAATGG GCGTGGATAG
2761  CGGTTTGACT CACGGGGATT TCCAAGTCTC CACCCCATTG ACGTCAATGG GAGTTTGTTT
2821  TGGCACCAAA ATCAACGGGA CTTTCCAAAA TGTCGTAATA ACCCCGCCCC GTTGACGCAA
2881  ATGGGCGGTA GGCGTGTACG GTGGGAGGTC TATATAAGCA GAGCTCGTTT AGTGAACCGT
2941  CAGATCGCCT GGAGACGCCA TCCACGCTGT TTTGACCTCC ATAGAAGACA CCGGGACCGA
3001  TCCAGCCTCC GCGGCCGGGA ACGGTGCATT GGAACGCGGA TTCCCCGTGC CAAGAGTGAC
3061  GTAAGTACCG CCTATAGACT CTATAGGCAC ACCCCTTTGG CTCTTATGCA TGCTATACTG
3121  TTTTTGGCTT GGGGCCTATA CACCCCCGCT CCTTATGCTA TAGGTGATGG TATAGCTTAG
3181  CCTATAGGTG TGGGTTATTG ACCATTATTG ACCACTCCCC TATTGGTGAC GATACTTTCC
3241  ATTACTAATC CATAACATGG CTCTTTGCCA CAACTATCTC TATTGGCTAT ATGCCAATAC
3301  TCTGTCCTTC AGAGACTGAC ACGGACTCTG TATTTTTACA GGATGGGGTC CCATTTATTA
3361  TTTACAAATT CACATATACA ACAACGCCGT CCCCCGTGCC CGCAGTTTTT ATTAAACATA
3421  GCGTGGGATC TCCACGCGAA TCTCGGGTAC GTGTTCCGGA CATGGGCTCT TCTCCGGTAG
3481  CGGCGGAGCT TCCACATCCG AGCCCTGGTC CCATGCCTCC AGCGGCTCAT GGTCGCTCGG
3541  CAGCTCCTTG CTCCTAACAG TGGAGGCCAG ACTTAGGCAC AGCACAATGC CCACCACCAC
3601  CAGTGTGCCG CACAAGGCCG TGGCGGTAGG GTATGTGTCT GAAAATGAGC TCGGAGATTG
3661  GGCTCGCACC GTGACGCAGA TGGAAGACTT AAGGCAGCGG CAGAAGAAGA TGCAGGCAGC
3721  TGAGTTGTTG TATTCTGATA AGAGTCAGAG GTAACTCCCG TTGCGGTGCT GTTAACGGTG
3781  GAGGGCAGTG TAGTCTGAGC AGTACTCGTT GCTGCCGCGC GCGCCACCAG ACATAATAGC
3841  TGACAGACTA ACAGACTGTT CCTTTCCATG GGTCTTTTCT GCAGTCACCG TCCAAGCTTG
3901  CAATCATGGA TGCAATGAAG AGAGGGCTCT GCTGTGTGCT GCTGCTGTGT GGAGCAGTCT
3961  TCGTTTCGGC TAGCAATGAT GATAAGTTAT ATCGGGCAGA TTCTAGACCT CCTGATGAAA
4021  TAAAGCAGTC AGGTGGTCTT ATGCCAAGAG GACAGAGTGA GTACTTTGAC CGAGGTACTC
4081  AAATGAATAT CAACCTTTAT GATCATGCAA GAGGAACTCA GACGGGATTT GTTAGGCACG
4141  ATGATGGATA TGTTTCCACC TCAATTAGTT TGAGAAGTGC CCACTTAGTG GGTCAAACTA
4201  TATTGTCTGG TCATTCTACT TATTATATAT ATGTTATAGC CACTGCACCC AACATGTTTA
4261  ACGTTAATGA TGTATTAGGG GCATACAGTC CTCATCCAGA TGAACAAGAA GTTTCTGCTT
4321  TAGGTGGGAT TCCATACTCC CAAATATATG GATGGTATCG AGTTCATTTT GGGGTGCTTG
4381  ATGAACAATT ACATCGTAAT AGGGGCTACA GAGATAGATA TTACAGTAAC TTAGATATTG
4441  CTCCAGCAGC AGATGGTTAT GGATTGGCAG GTTTCCCTCC GGAGCATAGA GCTTGGAGGG
4501  AAGAGCCGTG GATTCATCAT GCACCGCCGG GTTGTGGGAA TGCTCCAAGA TCATCGATGA
4561  GTAATACTTG CGATGAAAAA ACCCAAAGTC TAGGTGTAAA ATTCCTTGAC GAATACCAAT
4621  CTAAAGTTAA AAGACAAATA TTTTCAGGCT ATCAATCTGA TATTGATACA CATAATAGAA
4681  TTTGAGGATC CTCGCAATCC CTAGGAGGAT TAGGCAAGGG CTTGAGCTCA CGCTCTTGTG
4741  AGGGACAGAA ATACAATCAG GGGCAGTATA TGAATACTCC ATGGAGAAAC CCAGATCTAC
4801  GTATGATCAG CCTCGACTGT GCCTTCTAGT TGCCAGCCAT CTGTTGTTTG CCCCTCCCCC
4861  GTGCCTTCCT TGACCCTGGA AGGTGCCACT CCCACTGTCC TTTCCTAATA AAATGAGGAA
4921  ATTGCATCGC ATTGTCTGAG TAGGTGTCAT TCTATTCTGG GGGGTGGGGT GGGGCAGGAC
4981  AGCAAGGGGG AGGATTGGGA AGACAATAGC AGGCATGCTG GGGATGCGGT GGGCTCTATG
5041  GCTTCTGAGG CGGAAAGAAC CAGCTGGGGC TCGACAGCTC GACTCTAGAA TTCACTGGCC
5101  GTCGTTTTAC AACGTCGTGA CTGGGAAAAC CCTGGCGTTA CCCAACTTAA TCGCCTTGCA
5161  GCACATCCCC CTTTCGCCAG CTGGCGTAAT AGCGAAGAGG CCCGCACCGA TCGCCCTTCC
5221  CAACAGTTGC GCAGCCTGAA TGGCGAATGG CGCCTGATGC GGTATTTTCT CCTTACGCAT
5281  CTGTGCGGTA TTTCACACCG CATATGGTGC ACTCTCAGTA CAATCTGCTC TGATGCCGCA
5341  TAGTTAAGCC AGCCCCGACA CCCGCCAACA CCCGCTGACG CGCCCTGACG GGCTTGTCTG
5401  CTCCCGGCAT CCGCTTACAG ACAAGCTGTG ACCGTCTCCG GGAGCTGCAT GTGTCAGAGG
5461  TTTTCACCGT CATCACCGAA ACGCGCGA
```

FIG. 3-3



Molecule: pPJV2004, 5500 bps DNA Circular
File Name: pPJV2004.cm5,

Description: Ligation of LTA Nhe-Bam Insert into 7054 Nhe Bam Vector

Notes:

Molecule Features:

Type	Start	End	Name	Description
REGION	2242	3060	CMVpro	
REGION	3061	3884	intronA	
GENE	3906	3969	TPAsigCDS'	
GENE	3975	4697	LTA-CDS	
REGION	4805	5101	bGHpA	

Enzymes (13 sites)

PciI	1876,	SalI	2241,	MscI	2266,	SpeI	2356
SacII	3009,	NsiI	3106,	PstI	3879,	NheI	3969
BamHI	4698,	BglII	4805,	EheI	5261,	KasI	5261

FIG. 4-1

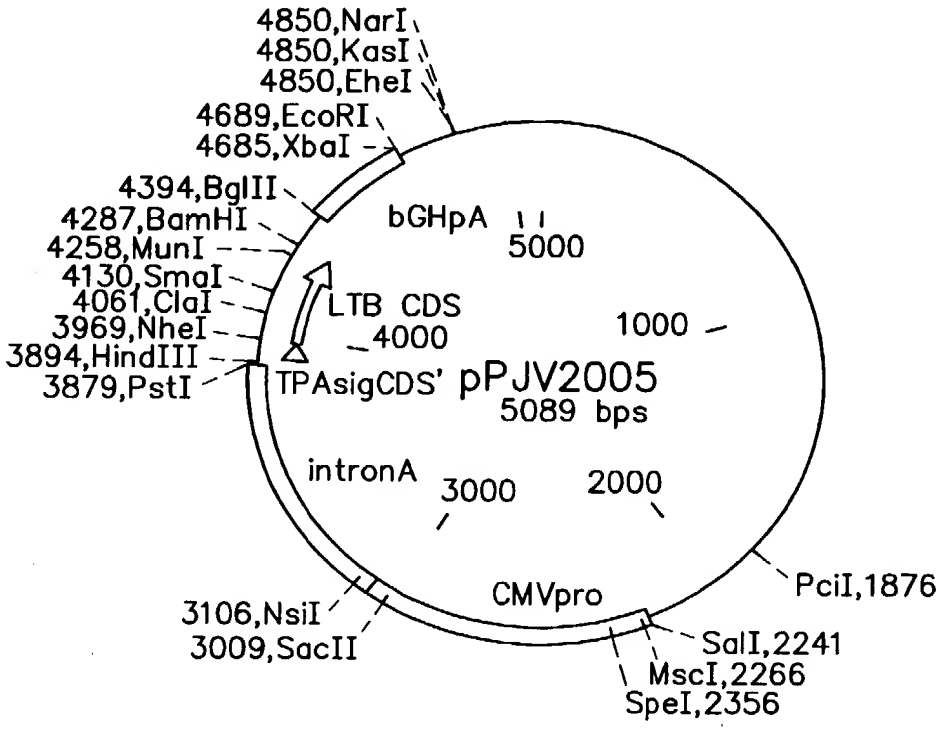
Molecule: pPJV2004, 5500 bps DNA Circular
Description: Ligation of LTA Nhe-Bam Insert into 7054 Nhe Bam Vector
File Name: pPJV2004.cm5,
Printed: 1-5500 bps (Full), format Single Strand

```
   1  GACGAAAGGG CCTCGTGATA CGCCTATTTT TATAGGTTAA TGTCATGATA ATAATGGTTT
  61  CTTAGACGTC AGGTGGCACT TTTCGGGGAA ATGTGCGCGG AACCCCTATT TGTTTATTTT
 121  TCTAAATACA TTCAAATATG TATCCGCTCA TGAGACAATA ACCCTGATAA ATGCTTCAAT
 181  AATATTGAAA AAGGAAGAGT ATGAGTATTC AACATTTCCG TGTCGCCCTT ATTCCCTTTT
 241  TTGCGGCATT TTGCCTTCCT GTTTTTGCTC ACCCAGAAAC GCTGGTGAAA GTAAAAGATG
 301  CTGAAGATCA GTTGGGTGCA CGAGTGGGTT ACATCGAACT GGATCTCAAC AGCGGTAAGA
 361  TCCTTGAGAG TTTTCGCCCC GAAGAACGTT TTCCAATGAT GAGCACTTTT AAAGTTCTGC
 421  TATGTGGCGC GGTATTATCC CGTATTGACG CCGGGCAAGA GCAACTCGGT CGCCGCATAC
 481  ACTATTCTCA GAATGACTTG GTTGAGTACT CACCAGTCAC AGAAAAGCAT CTTACGGATG
 541  GCATGACAGT AAGAGAATTA TGCAGTGCTG CCATAACCAT GAGTGATAAC ACTGCGGCCA
 601  ACTTACTTCT GACAACGATC GGAGGACCGA AGGAGCTAAC CGCTTTTTTG CACAACATGG
 661  GGGATCATGT AACTCGCCTT GATCGTTGGG AACCGGAGCT GAATGAAGCC ATACCAAACG
 721  ACGAGCGTGA CACCACGATG CCTGTAGCAA TGGCAACAAC GTTGCGCAAA CTATTAACTG
 781  GCGAACTACT TACTCTAGCT TCCCGGCAAC AATTAATAGA CTGGATGGAG GCGGATAAAG
 841  TTGCAGGACC ACTTCTGCGC TCGGCCCTTC CGGCTGGCTG GTTTATTGCT GATAAATCTG
 901  GAGCCGGTGA GCGTGGGTCT CGCGGTATCA TTGCAGCACT GGGGCCAGAT GGTAAGCCCT
 961  CCCGTATCGT AGTTATCTAC ACGACGGGGA GTCAGGCAAC TATGGATGAA CGAAATAGAC
1021  AGATCGCTGA GATAGGTGCC TCACTGATTA AGCATTGGTA ACTGTCAGAC CAAGTTTACT
1081  CATATATACT TTAGATTGAT TTAAAACTTC ATTTTTAATT TAAAAGGATC TAGGTGAAGA
1141  TCCTTTTTGA TAATCTCATG ACCAAAATCC CTTAACGTGA GTTTTCGTTC CACTGAGCGT
1201  CAGACCCCGT AGAAAAGATC AAAGGATCTT CTTGAGATCC TTTTTTTCTG CGCGTAATCT
1261  GCTGCTTGCA AACAAAAAAA CCACCGCTAC CAGCGGTGGT TTGTTTGCCG GATCAAGAGC
1321  TACCAACTCT TTTTCCGAAG GTAACTGGCT TCAGCAGAGC GCAGATACCA AATACTGTCC
1381  TTCTAGTGTA GCCGTAGTTA GGCCACCACT TCAAGAACTC TGTAGCACCG CCTACATACC
1441  TCGCTCTGCT AATCCTGTTA CCAGTGGCTG CTGCCAGTGG CGATAAGTCG TGTCTTACCG
1501  GGTTGGACTC AAGACGATAG TTACCGGATA AGGCGCAGCG GTCGGGCTGA ACGGGGGGTT
1561  CGTGCACACA GCCCAGCTTG GAGCGAACGA CCTACACCGA ACTGAGATAC CTACAGCGTG
1621  AGCATTGAGA AAGCGCCACG CTTCCCGAAG GGAGAAAGGC GGACAGGTAT CCGGTAAGCG
1681  GCAGGGTCGG AACAGGAGAG CGCACGAGGG AGCTTCCAGG GGGAAACGCC TGGTATCTTT
1741  ATAGTCCTGT CGGGTTTCGC CACCTCTGAC TTGAGCGTCG ATTTTTGTGA TGCTCGTCAG
1801  GGGGGCGGAG CCTATGGAAA AACGCCAGCA ACGCGGCCTT TTTACGGTTC CTGGCCTTTT
1861  GCTGGCCTTT TGCTCACATG TTCTTTCCTG CGTTATCCCC TGATTCTGTG GATAACCGTA
1921  TTACCGCCTT TGAGTGAGCT GATACCGCTC GCCGCAGCCG AACGACCGAG CGCAGCGAGT
1981  CAGTGAGCGA GGAAGCGGAA GAGCGCCCAA TACGCAAACC GCCTCTCCCC GCGCGTTGGC
2041  CGATTCATTA ATGCAGCTGG CACGACAGGT TTCCCGACTG GAAAGCGGGC AGTGAGCGCA
2101  ACGCAATTAA TGTGAGTTAG CTCACTCATT AGGCACCCCA GGCTTTACAC TTTATGCTTC
2161  CGGCTCGTAT GTTGTGTGGA ATTGTGAGCG GATAACAATT TCACACAGGA AACAGCTATG
2221  ACCATGATTA CGCCAAGCTA GTCGACATAA ATCAATATTG GCTATTGGCC ATTGCATACG
2281  TTGTATCTAT ATCATAATAT GTACATTTAT ATTGGCTCAT GTCCAATATG ACCGCCATGT
2341  TGACATTGAT TATTGACTAG TTATTAATAG TAATCAATTA CGGGGTCATT AGTTCATAGC
2401  CCATATATGG AGTTCCGCGT TACATAACTT ACGGTAAATG GCCCGCCTGG TGACCGCCCA
2461  ACGACCCCCG CCCATTGACG TCAATAATGA CGTATGTTCC CATAGTAACG CCAATAGGGA
2521  CTTTCCATTG ACGTCAATGG GTGGAGTATT TACGGTAAAC TGCCCACTTG GCAGTACATC
2581  AAGTGTATCA TATGCCAAGT CCGGCCCCCT ATTGACGTCA ATGACGGTAA ATGGCCCGCC
```

FIG. 4-2

```
2641  TGGCATTATG CCCAGTACAT GACCTTACGG GACTTTCCTA CTTGGCAGTA CATCTACGTA
2701  TTAGTCATCG CTATTACCAT GGTGATGCGG TTTTGGCAGT ACACCAATGG GCGTGGATAG
2761  CGGTTTGACT CACGGGGATT TCCAAGTCTC CACCCCATTG ACGTCAATGG GAGTTTGTTT
2821  TGGCACCAAA ATCAACGGGA CTTTCCAAAA TGTCGTAATA ACCCCGCCCC GTTGACGCAA
2881  ATGGGCGGTA GGCGTGTACG GTGGGAGGTC TATATAAGCA GAGCTCGTTT AGTGAACCGT
2941  CAGATCGCCT GGAGACGCCA TCCACGCTGT TTTGACCTCC ATAGAAGACA CCGGGACCGA
3001  TCCAGCCTCC GCGGCCGGGA ACGGTGCATT GGAACGCGGA TTCCCCGTGC CAAGAGTGAC
3061  GTAAGTACCG CCTATAGACT CTATAGGCAC ACCCCTTTGG CTCTTATGCA TGCTATACTG
3121  TTTTTGGCTT GGGGCCTATA CACCCCCGCT CCTTATGCTA TAGGTGATGG TATAGCTTAG
3181  CCTATAGGTG TGGGTTATTG ACCATTATTG ACCACTCCCC TATTGGTGAC GATACTTTCC
3241  ATTACTAATC CATAACATGG CTCTTTGCCA CAACTATCTC TATTGGCTAT ATGCCAATAC
3301  TCTGTCCTTC AGAGACTGAC ACGGACTCTG TATTTTTACA GGATGGGGTC CCATTTATTA
3361  TTTACAAATT CACATATACA ACAACGCCGT CCCCCGTGCC CGCAGTTTTT ATTAAACATA
3421  GCGTGGGATC TCCACGCGAA TCTCGGGTAC GTGTTCCGGA CATGGGCTCT TCTCCGGTAG
3481  CGGCGGAGCT TCCACATCCG AGCCCTGGTC CCATGCCTCC AGCGGCTCAT GGTCGCTCGG
3541  CAGCTCCTTG CTCCTAACAG TGGAGGCCAG ACTTAGGCAC AGCACAATGC CCACCACCAC
3601  CAGTGTGCCG CACAAGGCCG TGGCGGTAGG GTATGTGTCT GAAAATGAGC TCGGAGATTG
3661  GGCTCGCACC GTGACGCAGA TGGAAGACTT AAGGCAGCGG CAGAAGAAGA TGCAGGCAGC
3721  TGAGTTGTTG TATTCTGATA AGAGTCAGAG GTAACTCCCG TTGCGGTGCT GTTAACGGTG
3781  GAGGGCAGTG TAGTCTGAGC AGTACTCGTT GCTGCCGCGC GCGCCACCAG ACATAATAGC
3841  TGACAGACTA ACAGACTGTT CCTTTCCATG GGTCTTTTCT GCAGTCACCG TCCAAGCTTG
3901  CAATCATGGA TGCAATGAAG AGAGGGCTCT GCTGTGTGCT GCTGCTGTGT GGAGCAGTCT
3961  TCGTTTCGCC TAGCAATGCC GACAAATTAT ACCGTGCTGA CTCTAGACCC CCAGATGAAA
4021  TAAAACGTTC CGGAGGTCTT ATGCCCAGAG GGCATAATGA GTACTTCGAT AGAGGAACTC
4081  AAATGAATAT TAATCTTTAT GATCACGCGA GAGGAACACA AACCGGCTTT GTCAGATATG
4141  ATGACGGATA TGTTTCCACT TCTCTTAGTT TGAGAAGTGC TCACTTAGCA GGACAGTCTA
4201  TATTATCAGG ATATTCCACT TACTATATAT ATGTTATAGC GACAGCACCA AATATGTTTA
4261  ATGTTAATGA TGTATTAGGC GTATACAGCC CTCACCCATA TGAACAGGAG GTTTCTGCGT
4321  TAGGTGGAAT ACCATATTCT CAGATATATG GATGGTATCG TGTTAATTTT GGTGTGATTG
4381  ATGAACGATT ACATCGTAAC AGGGAATATA GAGACCGGTA TTACAGAAAT CTGAATATAG
4441  CTCCGGCAGA GGATGGTTAC AGATTAGCAG GTTTCCCACC GGATCACCAA GCTTGGAGAG
4501  AAGAACCCTG GATTCATCAT GCACCACAAG GTTGTGGAAA TTCATCAAGA ACAATTACAG
4561  GTGATACTTG TAATGAGGAG ACCCAGAATC TGAGCACAAT ATATCTCAGG AAATATCAAT
4621  CAAAAGTTAA GAGGCAGATA TTTTCAGACT ATCAGTCAGA GGTTGACATA TATAACAGAA
4681  TTCGGGATGA ATTATGAGGA TCCTCGCAAT CCCTAGGAGG ATTAGGCAAG GGCTTGAGCT
4741  CACGCTCTTG TGAGGGACAG AAATACAATC AGGGGCAGTA TATGAATACT CCATGGAGAA
4801  ACCCAGATCT ACGTATGATC AGCCTCGACT GTGCCTTCTA GTTGCCAGCC ATCTGTTGTT
4861  TGCCCCTCCC CCGTGCCTTC CTTGACCCTG GAAGGTGCCA CTCCCACTGT CCTTTCCTAA
4921  TAAAATGAGG AAATTGCATC GCATTGTCTG AGTAGGTGTC ATTCTATTCT GGGGGGTGGG
4981  GTGGGGCAGG ACAGCAAGGG GGAGGATTGG GAAGACAATA GCAGGCATGC TGGGGATGCG
5041  GTGGGCTCTA TGGCTTCTGA GGCGGAAAGA ACCAGCTGGG GCTCGACAGC TCGACTCTAG
5101  AATTCACTGG CCGTCGTTTT ACAACGTCGT GACTGGGAAA ACCCTGGCGT TACCCAACTT
5161  AATCGCCTTG CAGCACATCC CCCTTTCGCC AGCTGGCGTA ATAGCGAAGA GGCCCGCACC
5221  GATCGCCCTT CCCAACAGTT GCGCAGCCTG AATGGCGAAT GGCGCCTGAT GCGGTATTTT
5281  CTCCTTACGC ATCTGTGCGG TATTTCACAC CGCATATGGT GCACTCTCAG TACAATCTGC
5341  TCTGATGCCG CATAGTTAAG CCAGCCCCGA CACCCGCCAA CACCCGCTGA CGCGCCCTGA
5401  CGGGCTTGTC TGCTCCCGGC ATCCGCTTAC AGACAAGCTG TGACCGTCTC CGGGAGCTGC
5461  ATGTGTCAGA GGTTTTCACC GTCATCACCG AAACGCGCGA
```

FIG. 4-3



Molecule: pPJV2005, 5089 bps DNA Circular
File Name: pPJV2005.cm5,

Description: Ligation of LTB NheBam Frag into 7054 Nhe Bam Vector

Notes:

Molecule Features:

Type	Start	End	Name	Description
REGION	2242	3060	CMVpro	
REGION	3061	3884	intronA	
GENE	3906	3969	TPAsigCDS'	
GENE	3975	4286	LTB CDS	
REGION	4394	4690	bGHpA	

Enzymes (19 sites)

PciI	1876,	SalI	2241,	MscI	2266,	SpeI	2356
SacII	3009,	NsiI	3106,	PstI	3879,	HindIII	3894
NheI	3969,	ClaI	4061	SmaI	4130	MunI	4258

FIG. 5-1

Molecule: pPJV2005, 5089 bps DNA Circular
Description: Ligation of LTB NheBam Frag into 7054 Nhe Bam Vector
File Name: pPJV2005.cm5,
Printed: 1-5089 bps (Full), format Single Strand

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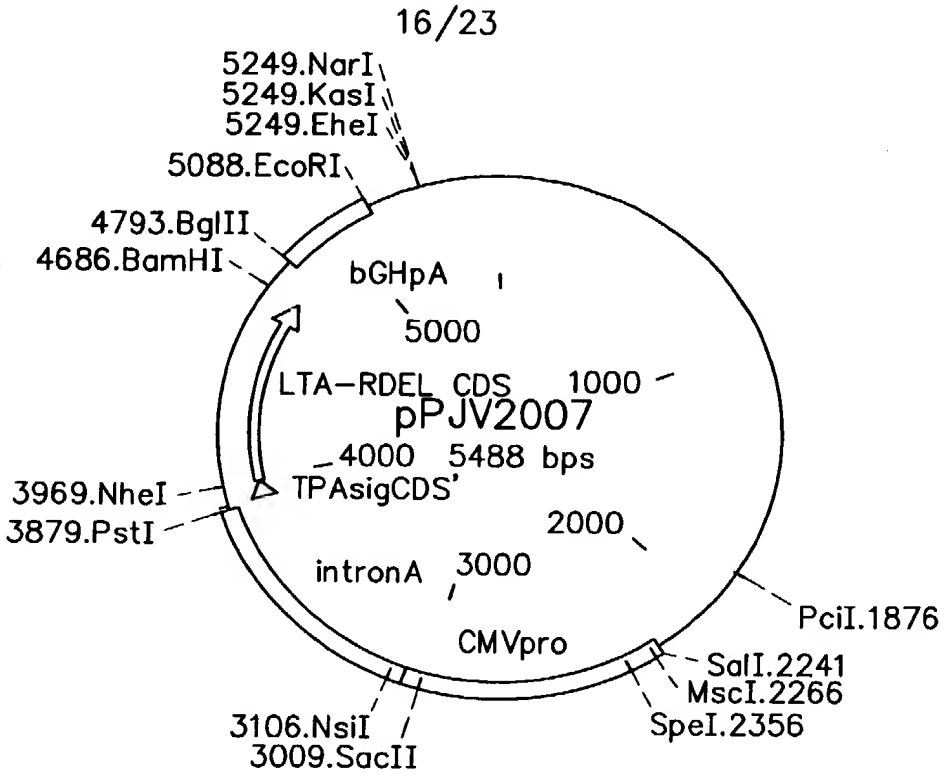
   1  GACGAAAGGG CCTCGTGATA CGCCTATTTT TATAGGTTAA TGTCATGATA ATAATGGTTT
  61  CTTAGACGTC AGGTGGCACT TTTCGGGGAA ATGTGCGCGG AACCCCTATT TGTTTATTTT
 121  TCTAAATACA TTCAAATATG TATCCGCTCA TGAGACAATA ACCCTGATAA ATGCTTCAAT
 181  AATATTGAAA AAGGAAGAGT ATGAGTATTC AACATTTCCG TGTCGCCCTT ATTCCCTTTT
 241  TTGCGGCATT TTGCCTTCCT GTTTTTGCTC ACCCAGAAAC GCTGGTGAAA GTAAAAGATG
 301  CTGAAGATCA GTTGGGTGCA CGAGTGGGTT ACATCGAACT GGATCTCAAC AGCGGTAAGA
 361  TCCTTGAGAG TTTTCGCCCC GAAGAACGTT TTCCAATGAT GAGCACTTTT AAAGTTCTGC
 421  TATGTGGCGC GGTATTATCC CGTATTGACG CCGGGCAAGA GCAACTCGGT CGCCGCATAC
 481  ACTATTCTCA GAATGACTTG GTTGAGTACT CACCAGTCAC AGAAAAGCAT CTTACGGATG
 541  GCATGACAGT AAGAGAATTA TGCAGTGCTG CCATAACCAT GAGTGATAAC ACTGCGGCCA
 601  ACTTACTTCT GACAACGATC GGAGGACCGA AGGAGCTAAC CGCTTTTTTG CACAACATGG
 661  GGGATCATGT AACTCGCCTT GATCGTTGGG AACCGGAGCT GAATGAAGCC ATACCAAACG
 721  ACGAGCGTGA CACCACGATG CCTGTAGCAA TGGCAACAAC GTTGCGCAAA CTATTAACTG
 781  GCGAACTACT TACTCTAGCT TCCCGGCAAC AATTAATAGA CTGGATGGAG GCGGATAAAG
 841  TTGCAGGACC ACTTCTGCGC TCGGCCCTTC CGGCTGGCTG GTTTATTGCT GATAAATCTG
 901  GAGCCGGTGA GCGTGGGTCT CGCGGTATCA TTGCAGCACT GGGGCCAGAT GGTAAGCCCT
 961  CCCGTATCGT AGTTATCTAC ACGACGGGGA GTCAGGCAAC TATGGATGAA CGAAATAGAC
1021  AGATCGCTGA GATAGGTGCC TCACTGATTA AGCATTGGTA ACTGTCAGAC CAAGTTTACT
1081  CATATATACT TTAGATTGAT TTAAAACTTC ATTTTTAATT TAAAAGGATC TAGGTGAAGA
1141  TCCTTTTTGA TAATCTCATG ACCAAAATCC CTTAACGTGA GTTTTCGTTC CACTGAGCGT
1201  CAGACCCCGT AGAAAAGATC AAAGGATCTT CTTGAGATCC TTTTTTTCTG CGCGTAATCT
1261  GCTGCTTGCA AACAAAAAAA CCACCGCTAC CAGCGGTGGT TTGTTTGCCG GATCAAGAGC
1321  TACCAACTCT TTTTCCGAAG GTAACTGGCT TCAGCAGAGC GCAGATACCA AATACTGTCC
1381  TTCTAGTGTA GCCGTAGTTA GGCCACCACT TCAAGAACTC TGTAGCACCG CCTACATACC
1441  TCGCTCTGCT AATCCTGTTA CCAGTGGCTG CTGCCAGTGG CGATAAGTCG TGTCTTACCG
1501  GGTTGGACTC AAGACGATAG TTACCGGATA AGGCGCAGCG GTCGGGCTGA ACGGGGGGTT
1561  CGTGCACACA GCCCAGCTTG GAGCGAACGA CCTACACCGA ACTGAGATAC CTACAGCGTG
1621  AGCATTGAGA AAGCGCCACG CTTCCCGAAG GGAGAAAGGC GGACAGGTAT CCGGTAAGCG
1681  GCAGGGTCGG AACAGGAGAG CGCACGAGGG AGCTTCCAGG GGGAAACGCC TGGTATCTTT
1741  ATAGTCCTGT CGGGTTTCGC CACCTCTGAC TTGAGCGTCG ATTTTTGTGA TGCTCGTCAG
1801  GGGGGCGGAG CCTATGGAAA AACGCCAGCA ACGCGGCCTT TTTACGGTTC CTGGCCTTTT
1861  GCTGGCCTTT TGCTCACATG TTCTTTCCTG CGTTATCCCC TGATTCTGTG GATAACCGTA
1921  TTACCGCCTT TGAGTGAGCT GATACCGCTC GCCGCAGCCG AACGACCGAG CGCAGCGAGT
1981  CAGTGAGCGA GGAAGCGGAA GAGCGCCCAA TACGCAAACC GCCTCTCCCC GCGCGTTGGC
2041  CGATTCATTA ATGCAGCTGG CACGACAGGT TTCCCGACTG GAAAGCGGGC AGTGAGCGCA
2101  ACGCAATTAA TGTGAGTTAG CTCACTCATT AGGCACCCCA GGCTTTACAC TTTATGCTTC
2161  CGGCTCGTAT GTTGTGTGGA ATTGTGAGCG GATAACAATT TCACACAGGA AACAGCTATG
2221  ACCATGATTA CGCCAAGCTA GTCGACATAA ATCAATATTG GCTATTGGCC ATTGCATACG
2281  TTGTATCTAT ATCATAATAT GTACATTTAT ATTGGCTCAT GTCCAATATG ACCGCCATGT
2341  TGACATTGAT TATTGACTAG TTATTAATAG TAATCAATTA CGGGGTCATT AGTTCATAGC
2401  CCATATATGG AGTTCCGCGT TACATAACTT ACGGTAAATG GCCCGCCTCG TGACCGCCCA
2461  ACGACCCCCG CCCATTGACG TCAATAATGA CGTATGTTCC CATAGTAACG CCAATAGGGA
2521  CTTTCCATTG ACGTCAATGG GTGGAGTATT TACGGTAAAC TGCCCACTTG GCAGTACATC
2581  AAGTGTATCA TATGCCAAGT CCGGCCCCCT ATTGACGTCA ATGACGGTAA ATGGCCCGCC
```

FIG. 5-2

```
2641  TGGCATTATG CCCAGTACAT GACCTTACGG GACTTTCCTA CTTGGCAGTA CATCTACGTA
2701  TTAGTCATCG CTATTACCAT GGTGATGCGG TTTTGGCAGT ACACCAATGG GCGTGGATAG
2761  CGGTTTGACT CACGGGGATT TCCAAGTCTC CACCCCATTG ACGTCAATGG GAGTTTGTTT
2821  TGGCACCAAA ATCAACGGGA CTTTCCAAAA TGTCGTAATA ACCCCGCCCC GTTGACGCAA
2881  ATGGGCGGTA GGCGTGTACG GTGGGAGGTC TATATAAGCA GAGCTCGTTT AGTGAACCGT
2941  CAGATCGCCT GGAGACGCCA TCCACGCTGT TTTGACCTCC ATAGAAGACA CCGGGACCGA
3001  TCCAGCCTCC GCGGCCGGGA ACGGTGCATT GGAACGCGGA TTCCCCGTGC CAAGAGTGAC
3061  GTAAGTACCG CCTATAGACT CTATAGGCAC ACCCCTTTGG CTCTTATGCA TGCTATACTG
3121  TTTTTGGCTT GGGGCCTATA CACCCCCGCT CCTTATGCTA TAGGTGATGG TATAGCTTAG
3181  CCTATAGGTG TGGGTTATTG ACCATTATTG ACCACTCCCC TATTGGTGAC GATACTTTCC
3241  ATTACTAATC CATAACATGG CTCTTTGCCA CAACTATCTC TATTGGCTAT ATGCCAATAC
3301  TCTGTCCTTC AGAGACTGAC ACGGACTCTG TATTTTTACA GGATGGGGTC CCATTTATTA
3361  TTTACAAATT CACATATACA ACAACGCCGT CCCCCGTGCC CGCAGTTTTT ATTAAACATA
3421  GCGTGGGATC TCCACGCGAA TCTCGGGTAC GTGTTCCGGA CATGGGCTCT TCTCCGGTAG
3481  CGGCGGAGCT TCCACATCCG AGCCCTGGTC CCATGCCTCC AGCGGCTCAT GGTCGCTCGG
3541  CAGCTCCTTG CTCCTAACAG TGGAGGCCAG ACTTAGGCAC AGCACAATGC CCACCACCAC
3601  CAGTGTGCCG CACAAGGCCG TGGCGGTAGG GTATGTGTCT GAAAATGAGC TCGGAGATTG
3661  GGCTCGCACC GTGACGCAGA TGGAAGACTT AAGGCAGCGG CAGAAGAAGA TGCAGGCAGC
3721  TGAGTTGTTG TATTCTGATA AGAGTCAGAG GTAACTCCCG TTGCGGTGCT GTTAACGGTG
3781  GAGGGCAGTG TAGTCTGAGC AGTACTCGTT GCTGCCGCGC GCGCCACCAG ACATAATAGC
3841  TGACAGACTA ACAGACTGTT CCTTTCCATG GGTCTTTTCT GCAGTCACCG TCCAAGCTTG
3901  CAATCATGGA TGCAATGAAG AGAGGGCTCT GCTGTGTGCT GCTGCTGTGT GGAGCAGTCT
3961  TCGTTTCGGC TAGCGCTCCC CAGTCTATTA CAGAACTATG TTCGGAATAT CGCAACACAC
4021  AAATATATAC GATAAATGAC AAGATACTAT CATATACGGA ATCGATGGCA GGCAAAAGAG
4081  AAATGGTTAT CATTACATTT AAGAGCGGCG CAACATTTCA GGTCGAAGTC CCGGGCAGTC
4141  AACATATAGA CTCCCAAAAA AAAGCCATTG AAAGGATGAA GGACACATTA AGAATCACAT
4201  ATCTGACCGA GACCAAAATT GATAAATTAT GTGTATGGAA TAATAAAACC CCCAATTCAA
4261  TTGCGGCAAT CAGTATGGAA AACTAGGGAT CCTCGCAATC CCTAGGAGGA TTAGGCAAGG
4321  GCTTGAGCTC ACGCTCTTGT GAGGGACAGA AATACAATCA GGGGCAGTAT ATGAATACTC
4381  CATGGAGAAA CCCAGATCTA CGTATGATCA GCCTCGACTG TGCCTTCTAG TTGCCAGCCA
4441  TCTGTTGTTT GCCCCTCCCC CGTGCCTTCC TTGACCCTGG AAGGTGCCAC TCCCACTGTC
4501  CTTTCCTAAT AAAATGAGGA AATTGCATCG CATTGTCTGA GTAGGTGTCA TTCTATTCTG
4561  GGGGGTGGGG TGGGGCAGGA CAGCAAGGGG GAGGATTGGG AAGACAATAG CAGGCATGCT
4621  GGGGATGCGG TGGGCTCTAT GGCTTCTGAG GCGGAAAGAA CCAGCTGGGG CTCGACAGCT
4681  CGACTCTAGA ATTCACTGGC CGTCGTTTTA CAACGTCGTG ACTGGGAAAA CCCTGGCGTT
4741  ACCCAACTTA ATCGCCTTGC AGCACATCCC CCTTTCGCCA GCTGGCGTAA TAGCGAAGAG
4801  GCCCGCACCG ATCGCCCTTC CCAACAGTTG CGCAGCCTGA ATGGCGAATG GCGCCTGATG
4861  CGGTATTTTC TCCTTACGCA TCTGTGCGGT ATTTCACACC GCATATGGTG CACTCTCAGT
4921  ACAATCTGCT CTGATGCCGC ATAGTTAAGC CAGCCCCGAC ACCCGCCAAC ACCCGCTGAC
4981  GCGCCCTGAC GGGCTTGTCT GCTCCCGGCA TCCGCTTACA GACAAGCTGT GACCGTCTCC
5041  GGGAGCTGCA TGTGTCAGAG GTTTTCACCG TCATCACCGA AACGCGCGA
```

FIG. 5-3



Molecule: pPJV2007, 5488 bps DNA Circular
File Name: pPJV2007.cm5,

Description: Ligation of LTA-RDEL Nhe Bam insert into 7054 Nhe Bam Vector

Notes:

Molecule Features:

Type	Start	End	Name	Description
REGION	2242	3060	CMVpro	
REGION	3061	3884	intronA	
GENE	3906	3969	TPAsigCDS'	
GENE	3975	4685	LTA-RDEL CDS	
REGION	4793	5089	bGHpA	

Enzymes (14 sites)

PciI	1876,	SalI	2241,	MscI	2266,	SpeI	2356
SacII	3009,	NsiI	3106,	PstI	3879,	NheI	3969
BamHI	4686,	BglII	4793,	EcoRI	5088,	EheI	5249

FIG. 6-1

Molecule: pPJV2007, 5488 bps DNA Circular
Description: Ligation of LTA-RDEL Nhe Bam insert into 7054 Nhe Bam Vector
File Name: pPJV2007.cm5,
Printed: 1-5488 bps (Full), format Single Strand

```
   1  GACGAAAGGG CCTCGTGATA CGCCTATTTT TATAGGTTAA TGTCATGATA ATAATGGTTT
  61  CTTAGACGTC AGGTGGCACT TTTCGGGGAA ATGTGCGCGG AACCCCTATT TGTTTATTTT
 121  TCTAAATACA TTCAAATATG TATCCGCTCA TGAGACAATA ACCCTGATAA ATGCTTCAAT
 181  AATATTGAAA AAGGAAGAGT ATGAGTATTC AACATTTCCG TGTCGCCCTT ATTCCCTTTT
 241  TTGCGGCATT TTGCCTTCCT GTTTTTGCTC ACCCAGAAAC GCTGGTGAAA GTAAAAGATG
 301  CTGAAGATCA GTTGGGTGCA CGAGTGGGTT ACATCGAACT GGATCTCAAC AGCGGTAAGA
 361  TCCTTGAGAG TTTTCGCCCC GAAGAACGTT TTCCAATGAT GAGCACTTTT AAAGTTCTGC
 421  TATGTGGCGC GGTATTATCC CGTATTGACG CCGGGCAAGA GCAACTCGGT CGCCGCATAC
 481  ACTATTCTCA GAATGACTTG GTTGAGTACT CACCAGTCAC AGAAAAGCAT CTTACGGATG
 541  GCATGACAGT AAGAGAATTA TGCAGTGCTG CCATAACCAT GAGTGATAAC ACTGCGGCCA
 601  ACTTACTTCT GACAACGATC GGAGGACCGA AGGAGCTAAC CGCTTTTTTG CACAACATGG
 661  GGGATCATGT AACTCGCCTT GATCGTTGGG AACCGGAGCT GAATGAAGCC ATACCAAACG
 721  ACGAGCGTGA CACCACGATG CCTGTAGCAA TGGCAACAAC GTTGCGCAAA CTATTAACTG
 781  GCGAACTACT TACTCTAGCT TCCCGGCAAC AATTAATAGA CTGGATGGAG GCGGATAAAG
 841  TTGCAGGACC ACTTCTGCGC TCGGCCCTTC CGGCTGGCTG GTTTATTGCT GATAAATCTG
 901  GAGCCGGTGA GCGTGGGTCT CGCGGTATCA TTGCAGCACT GGGGCCAGAT GGTAAGCCCT
 961  CCCGTATCGT AGTTATCTAC ACGACGGGGA GTCAGGCAAC TATGGATGAA CGAAATAGAC
1021  AGATCGCTGA GATAGGTGCC TCACTGATTA AGCATTGGTA ACTGTCAGAC CAAGTTTACT
1081  CATATATACT TTAGATTGAT TTAAAACTTC ATTTTTAATT TAAAAGGATC TAGGTGAAGA
1141  TCCTTTTTGA TAATCTCATG ACCAAAATCC CTTAACGTGA GTTTTCGTTC CACTGAGCGT
1201  CAGACCCCGT AGAAAAGATC AAAGGATCTT CTTGAGATCC TTTTTTTCTG CGCGTAATCT
1261  GCTGCTTGCA AACAAAAAAA CCACCGCTAC CAGCGGTGGT TTGTTTGCCG GATCAAGAGC
1321  TACCAACTCT TTTTCCGAAG GTAACTGGCT TCAGCAGAGC GCAGATACCA AATACTGTCC
1381  TTCTAGTGTA GCCGTAGTTA GGCCACCACT TCAAGAACTC TGTAGCACCG CCTACATACC
1441  TCGCTCTGCT AATCCTGTTA CCAGTGGCTG CTGCCAGTGG CGATAAGTCG TGTCTTACCG
1501  GGTTGGACTC AAGACGATAG TTACCGGATA AGGCGCAGCG GTCGGGCTGA ACGGGGGGTT
1561  CGTGCACACA GCCCAGCTTG GAGCGAACGA CCTACACCGA ACTGAGATAC CTACAGCGTG
1621  AGCATTGAGA AAGCGCCACG CTTCCCGAAG GGAGAAAGGC GGACAGGTAT CCGGTAAGCG
1681  GCAGGGTCGG AACAGGAGAG CGCACGAGGG AGCTTCCAGG GGGAAACGCC TGGTATCTTT
1741  ATAGTCCTGT CGGGTTTCGC CACCTCTGAC TTGAGCGTCG ATTTTTGTGA TGCTCGTCAG
1801  GGGGGCGGAG CCTATGGAAA AACGCCAGCA ACGCGGCCTT TTTACGGTTC CTGGCCTTTT
1861  GCTGGCCTTT TGCTCACATG TTCTTTCCTG CGTTATCCCC TGATTCTGTG GATAACCGTA
1921  TTACCGCCTT TGAGTGAGCT GATACCGCTC GCCGCAGCCG AACGACCGAG CGCAGCGAGT
1981  CAGTGAGCGA GGAAGCGGAA GAGCGCCCAA TACGCAAACC GCCTCTCCCC GCGCGTTGGC
2041  CGATTCATTA ATGCAGCTGG CACGACAGGT TTCCCGACTG GAAAGCGGGC AGTGAGCGCA
2101  ACGCAATTAA TGTGAGTTAG CTCACTCATT AGGCACCCCA GGCTTTACAC TTTATGCTTC
2161  CGGCTCGTAT GTTGTGTGGA ATTGTGAGCG GATAACAATT TCACACAGGA AACAGCTATG
2221  ACCATGATTA CGCCAAGCTA GTCGACATAA ATCAATATTG GCTATTGGCC ATTGCATACG
2281  TTGTATCTAT ATCATAATAT GTACATTTAT ATTGGCTCAT GTCCAATATG ACCGCCATGT
2341  TGACATTGAT TATTGACTAG TTATTAATAG TAATCAATTA CGGGGTCATT AGTTCATAGC
2401  CCATATATGG AGTTCCGCGT TACATAACTT ACGGTAAATG GCCCGCCTCG TGACCGCCCA
2461  ACGACCCCCG CCCATTGACG TCAATAATGA CGTATGTTCC CATAGTAACG CCAATAGGGA
2521  CTTTCCATTG ACGTCAATGG GTGGAGTATT TACGGTAAAC TGCCCACTTG GCAGTACATC
2581  AAGTGTATCA TATGCCAAGT CCGGCCCCCT ATTGACGTCA ATGACGGTAA ATGGCCCGCC
2641  TGGCATTATG CCCAGTACAT GACCTTACGG GACTTTCCTA CTTGGCAGTA CATCTACGTA
2701  TTAGTCATCG CTATTACCAT GGTGATGCGG TTTTGGCAGT ACACCAATGG GCGTGGATAG
```

FIG. 6-2

```
2761  CGGTTTGACT CACGGGGATT TCCAAGTCTC CACCCCATTG ACGTCAATGG GAGTTTGTTT
2821  TGGCACCAAA ATCAACGGGA CTTTCCAAAA TGTCGTAATA ACCCCGCCCC GTTGACGCAA
2881  ATGGGCGGTA GGCGTGTACG GTGGGAGGTC TATATAAGCA GAGCTCGTTT AGTGAACCGT
2941  CAGATCGCCT GGAGACGCCA TCCACGCTGT TTTGACCTCC ATAGAAGACA CCGGGACCGA
3001  TCCAGCCTCC GCGGCCGGGA ACGGTGCATT GGAACGCGGA TTCCCCGTGC CAAGAGTGAC
3061  GTAAGTACCG CCTATAGACT CTATAGGCAC ACCCCTTTGG CTCTTATGCA TGCTATACTG
3121  TTTTTGGCTT GGGGCCTATA CACCCCCGCT CCTTATGCTA TAGGTGATGG TATAGCTTAG
3181  CCTATAGGTG TGGGTTATTG ACCATTATTG ACCACTCCCC TATTGGTGAC GATACTTTCC
3241  ATTACTAATC CATAACATGG CTCTTTGCCA CAACTATCTC TATTGGCTAT ATGCCAATAC
3301  TCTGTCCTTC AGAGACTGAC ACGGACTCTG TATTTTTACA GGATGGGGTC CCATTTATTA
3361  TTTACAAATT CACATATACA ACAACGCCGT CCCCCGTGCC CGCAGTTTTT ATTAAACATA
3421  GCGTGGGATC TCCACGCGAA TCTCGGGTAC GTGTTCCGGA CATGGGCTCT TCTCCGGTAG
3481  CGGCGGAGCT TCCACATCCG AGCCCTGGTC CCATGCCTCC AGCGGCTCAT GGTCGCTCGG
3541  CAGCTCCTTG CTCCTAACAG TGGAGGCCAG ACTTAGGCAC AGCACAATGC CCACCACCAC
3601  CAGTGTGCCG CACAAGGCCG TGGCGGTAGG GTATGTGTCT GAAAATGAGC TCGGAGATTG
3661  GGCTCGCACC GTGACGCAGA TGGAAGACTT AAGGCAGCGG CAGAAGAAGA TGCAGGCAGC
3721  TGAGTTGTTG TATTCTGATA AGAGTCAGAG GTAACTCCCG TTGCGGTGCT GTTAACGGTG
3781  GAGGGCAGTG TAGTCTGAGC AGTACTCGTT GCTGCCGCGC GCGCCACCAG ACATAATAGC
3841  TGACAGACTA ACAGACTGTT CCTTTCCATG GGTCTTTTCT GCAGTCACCG TCCAAGCTTG
3901  CAATCATGGA TGCAATGAAG AGAGGGCTCT GCTGTGTGCT GCTGCTGTGT GGAGCAGTCT
3961  TCGTTTCGGC TAGCAATGGC GACAAATTAT ACCGTGCTGA CTCTAGACCC CCAGATGAAA
4021  TAAAACGTTC CGGAGGTCTT ATGCCCAGAT GGCATAATGA GTACTTCGAT AGAGGAACTC
4081  AAATGAATAT TAATCTTTAT GATCACGCGA GAGGAACACA AACCGGCTTT GTCAGATATG
4141  ATGACGGATA TGTTTCCACT TCTCTTAGTT TGAGAAGTGC TCACTTAGCA GGACAGTCTA
4201  TATTATCAGG ATATTCCACT TACTATATAT ATGTTATAGC GACAGCACCA AATATGTTTA
4261  ATGTTAATGA TGTATTAGGC GTATACAGCC CTCACCCATA TGAACAGGAG GTTTCTGCGT
4321  TAGGTGGAAT ACCATATTCT CAGATATATG GATGGTATCG TGTTAATTTT GGTGTGATTG
4381  ATGAACGATT ACATCGTAAC AGCGAATATA GAGACCGGTA TTACAGAAAT CTGAATATAG
4441  CTCCGGCAGA GGATGGTTAC AGATTAGCAG GTTTCCCACC GGATCACCAA GCTTGGAGAG
4501  AAGAACCCTG GATTCATCAT GCACCACAAG GTTGTGGAAA TTCATCAAGA ACAATTACAG
4561  GTGATACTTG TAATGAGGAG ACCCAGAATC TGAGCACAAT ATATCTCAGG AAATATCAAT
4621  CAAAAGTTAA GAGGCAGATA TTTTCAGACT ATCAGTCAGA GGTTGACATA TATAACAGAA
4681  TTTGACGATC CTCGCAATCC CTAGGAGGAT TAGGCAAGGG CTTGAGCTCA CGCTCTTGTG
4741  AGGGACAGAA ATACAATCAG GGGCAGTATA TGAATACTCC ATGGAGAAAC CCAGATCTAC
4801  GTATGATCAG CCTCGACTGT GCCTTCTAGT TGCCAGCCAT CTGTTGTTTG CCCCTCCCCC
4861  GTGCCTTCCT TGACCCTGGA AGGTGCCACT CCCACTGTCC TTTCCTAATA AAATGAGGAA
4921  ATTGCATCGC ATTGTCTGAG TAGGTGTCAT TCTATTCTGG GGGGTGGGGT GGGGCAGGAC
4981  AGCAAGGGGG AGGATTGGGA AGACAATAGC AGGCATGCTG GGGATGCGGT GGGCTCTATG
5041  GCTTCTGAGG CGGAAAGAAC CAGCTGGGGC TCGACAGCTC GACTCTAGAA TTCACTGGCC
5101  GTCGTTTTAC AACGTCGTGA CTGGGAAAAC CCTGGCGTTA CCCAACTTAA TCGCCTTGCA
5161  GCACATCCCC CTTTCGCCAG CTGGCGTAAT AGCGAAGAGG CCCGCACCGA TCGCCCTTCC
5221  CAACAGTTGC GCAGCCTGAA TGGCGAATGG CGCCTGATGC GGTATTTTCT CCTTACGCAT
5281  CTGTGCGGTA TTTCACACCG CATATGGTGC ACTCTCAGTA CAATCTGCTC TGATGCCGCA
5341  TAGTTAAGCC AGCCCCGACA CCCGCCAACA CCCGCTGACG CGCCCTGACG GGCTTGTCTG
5401  CTCCCGGCAT CCGCTTACAG ACAAGCTGTG ACCGTCTCCG GGAGCTGCAT GTGTCAGAGG
5461  TTTTCACCGT CATCACCGAA ACGCGCGA
```

FIG. 6-3

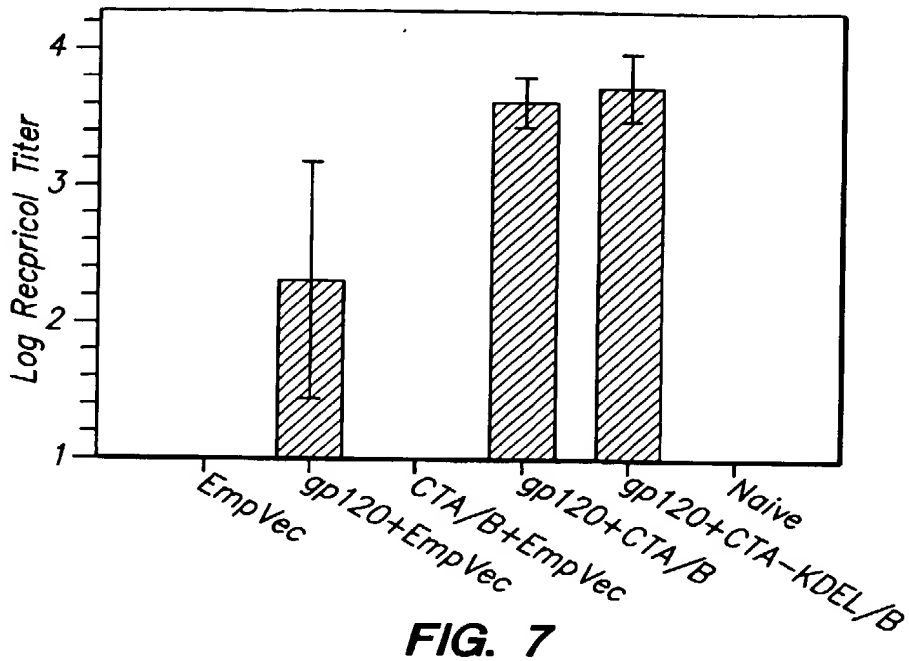

Log Recpricol Titer
4
3
2
1
EmpVec
gp120+EmpVec
CTA/B+EmpVec
gp120+CTA/B
gp120+CTA-KDEL/B
Naive

FIG. 7

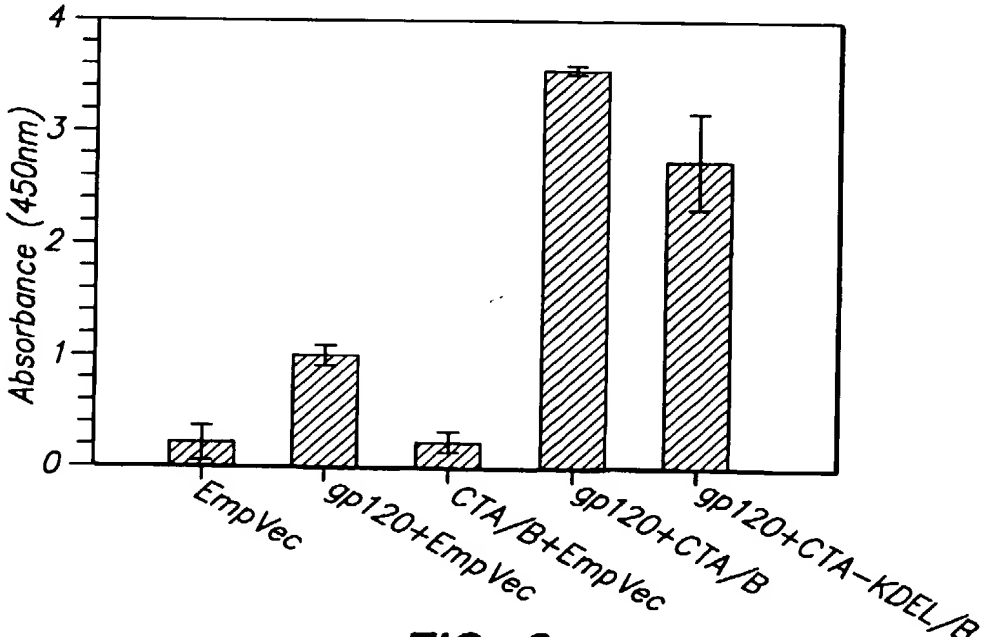

Absorbance (450nm)
4
3
2
1
0
EmpVec
gp120+EmpVec
CTA/B+EmpVec
gp120+CTA/B
gp120+CTA-KDEL/B

FIG. 8

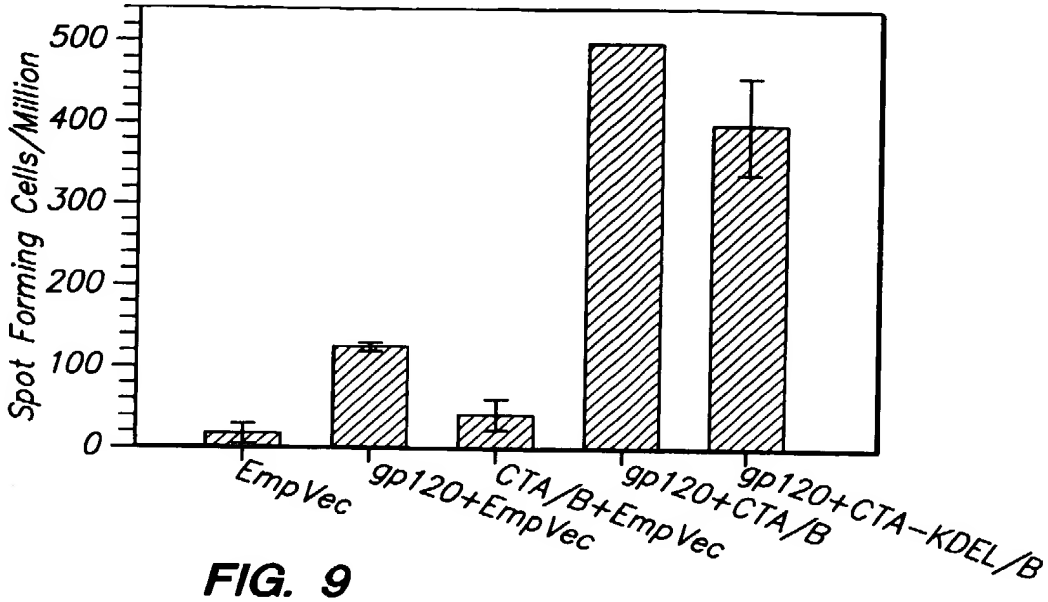

Spot Forming Cells/Million
500
400
300
200
100
0
EmpVec
gp120+EmpVec
CTA/B+EmpVec
gp120+CTA/B
gp120+CTA-KDEL/B

FIG. 9

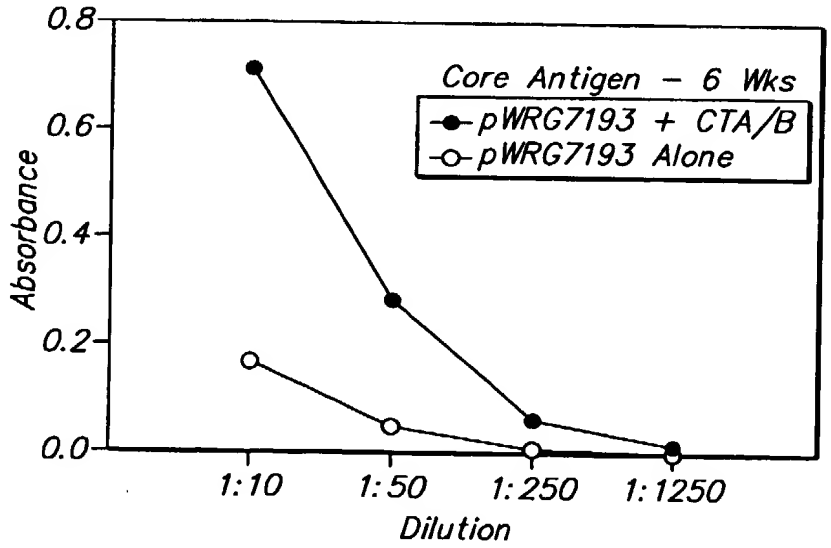

Absorbance
0.8
0.6
0.4
0.2
0.0
Core Antigen – 6 Wks
pWRG7193 + CTA/B
pWRG7193 Alone
1:10
1:50
1:250
1:1250
Dilution

FIG. 10

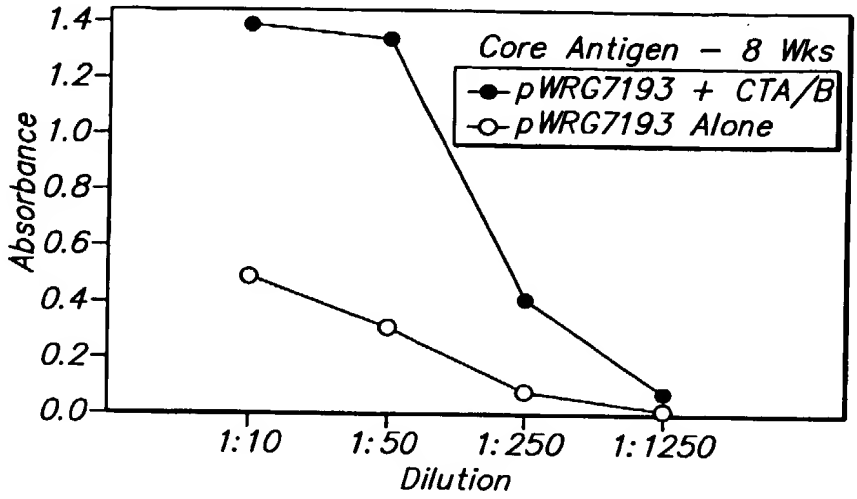

Core Antigen – 8 Wks
pWRG7193 + CTA/B
pWRG7193 Alone
Absorbance
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
1:10
1:50
1:250
1:1250
Dilution

FIG. 11

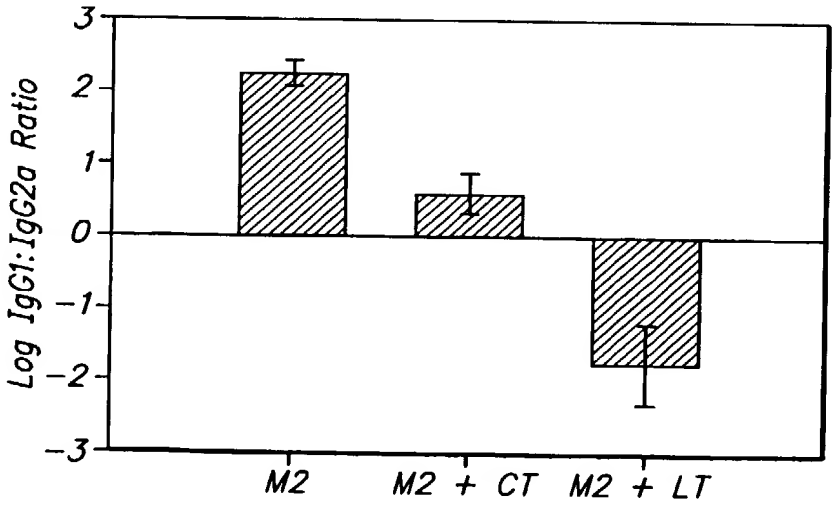

Log IgG1:IgG2a Ratio
3
2
1
0
−1
−2
−3
M2
M2 + CT
M2 + LT

FIG. 12

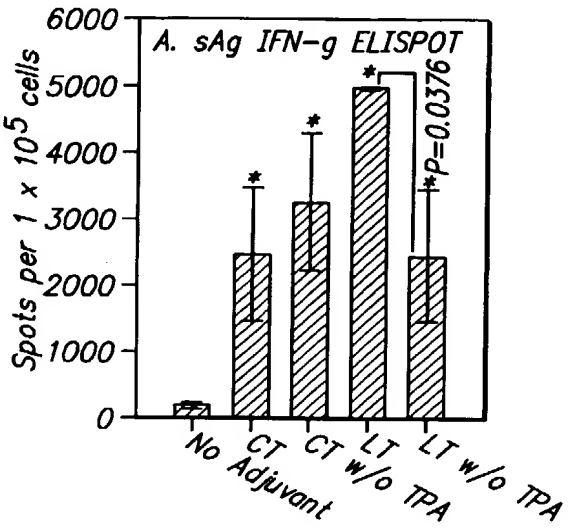


FIG. 13A

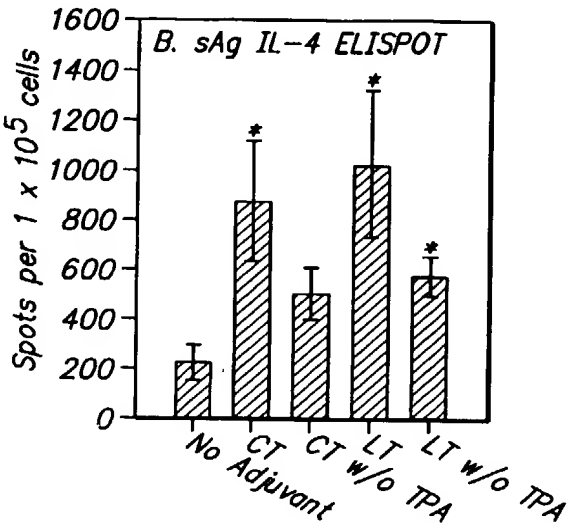


FIG. 13B

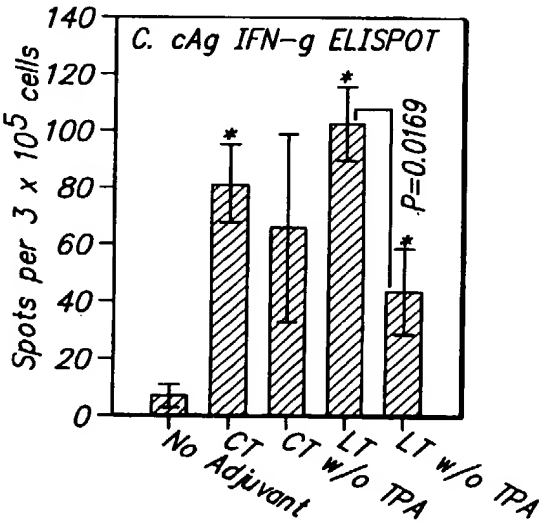


FIG. 13C

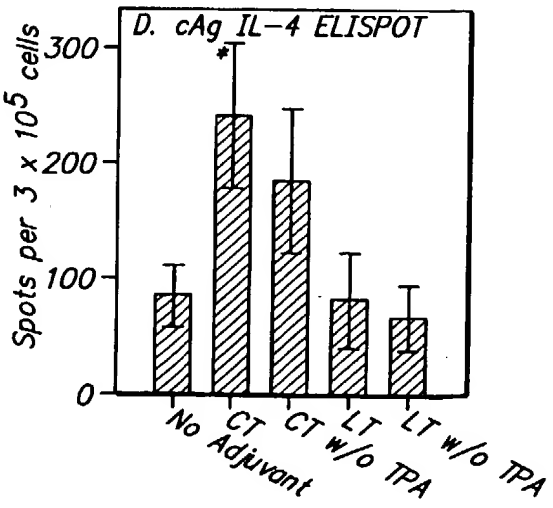


FIG. 13D

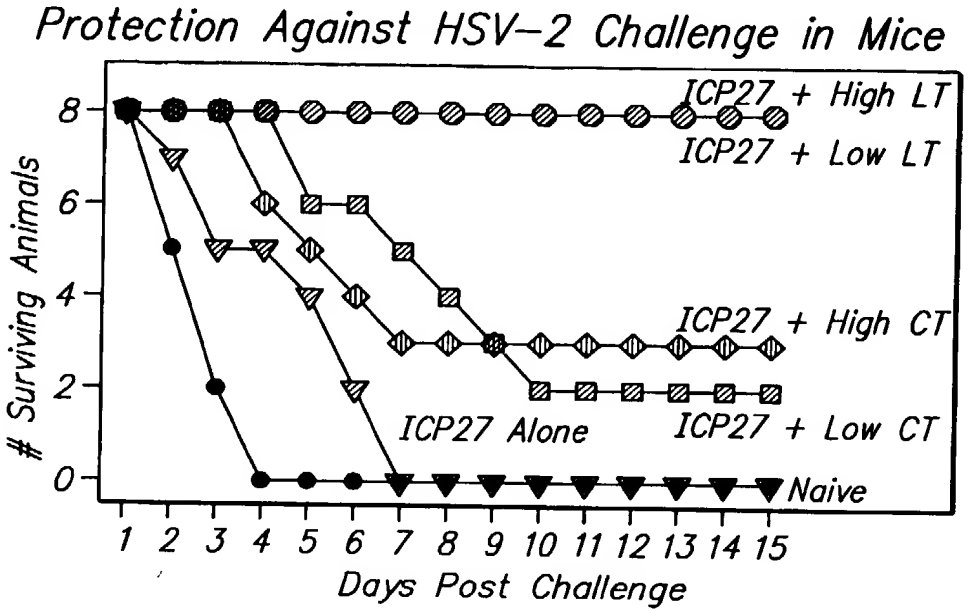

Protection Against HSV-2 Challenge in Mice
Surviving Animals
0
2
4
6
8
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Days Post Challenge
ICP27 + High LT
ICP27 + Low LT
ICP27 + High CT
ICP27 + Low CT
ICP27 Alone
Naive

FIG. 14